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Money
and
Banking
*A First
Course*



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Riches are for spending, and spending for honor and good action; therefore extraordinary expense must be limited by the worth of the occasion; for voluntary undoing may be as well for a man's country as for the kingdom of heaven . . .

Francis Bacon, *Essays*, "OF EXPENSE," 1597.

PREFACE

THIS BOOK represents my attempt to put between two covers material for a one-semester introductory course in the subject of money and banking. I have tried to make it neither too long nor too short; too difficult nor too simple. If there is a predominant theme of emphasis it is the crystallization of the notion that our modern money supply is primarily debts that are generally acceptable. My experience leads me to conclude that students can give lip service to this idea but that they "absorb" it with difficulty. The notion is too contrary to common impressions.

The "money-as-debt" concept is so basic to a proper consideration of actual problems in the field of finance that considerable emphasis is put upon it in the early chapters, perhaps at the cost of some repetition. Even so, I have found by using the text in mimeographed form that there is apparently not too much of this emphasis.

The arrangement of chapters differs in some respects from arrangements often employed. Some instructors may wish to cover the chapters in an order different from that employed here, and different sequences are entirely feasible. The general idea of the present arrangement is that the first ten chapters treat the nature of money and banks; the next eleven treat the banking system with respect to its American characteristics; Chapters XXII to XXIX take up some recent problems; and the remaining chapters treat the theoretical relationships of money, prices, and incomes. This division is not rigid, as several chapters could be included in more than one group; hence no formal division of the book into "parts" has been made.

In limiting the content of the book I have been guided by the very practical consideration of the time available in the typical course and the amount of material that may be covered. The arrangement of material and the number and length of chapters also reflect this consideration. The present arrangement permits reading at the rate of approximately a chapter for each assignment. It will sometimes

be desirable to devote more class time to some chapters than to others, however. On the other hand, some chapters may be omitted without affecting the continuity of the others (for example, Chapters XIX through XXI). In general, facts are covered first, in order to lay a better groundwork for theoretical considerations. No sharp line can be drawn between fact and theory, of course, but it may be said that the last six chapters describe relationships while the preceding ones describe institutions.

I have excluded some material with reluctance, particularly material dealing with proposals to reform the monetary standard, such as those of Professors Fisher and Graham. In the belief that a textbook should cover a prescribed area, however, I have tried to remember that the most vigorously pruned plant usually outgrows its neighbors eventually.

Several of the chapters have been read by Professors B. U. Ratchford and Clark Allen. Their very helpful comments and suggestions resulted in a considerable improvement in the manuscript at several points. The errors and imperfections that remain are in no way their responsibility. I am indebted to Mr. and Mrs. Escalus Elliott for their work on the illustrations. Several publishers kindly granted permission to quote from material under copyright; suitable footnotes indicate my obligations in this respect. The Chase National Bank graciously supplied illustrations of several early forms of money. The students who were willing and interested "guinea pigs" for the experiment with an early mimeographed edition made possible revisions that otherwise could not have been made.

I cannot say, as did Victor Hugo for the entire preface of his *History of a Crime*, "This book is more than timely; it is imperative. I publish it." I will be satisfied if it is timely.

W. W.

Durham, N.C.
May, 1947

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II

THE NATURE OF MONEY

Few drivers of automobiles or passengers on busses or airplanes know very much about internal combustion engines or the principles of aerodynamics. Thousands of people daily use skyscrapers, elevators, subways, radios, telephones, and numerous other complicated things with very little understanding of the principles of their construction or operation. Nor is it at all necessary that they should understand them. We live in an age of great and increasing specialization in which few people have the time or inclination to learn new sciences or arts beyond those they employ to earn a living or to furnish diversion. In the days of the old philosophers it was not presumptuous for a learned man to attempt to acquire all recorded knowledge. Today no one could hope to live long enough to make more than an impressive start.

One of the many complicated modern devices used by nearly everyone is money. Money, of course, is not a new invention, but modern money bears about the same relationship to ancient money as a jet plane bears to an oxcart. Money is probably no more widely understood than radar ; perhaps less, because common use of money breeds a misleading feeling of familiarity. Practically everyone uses money, but not many have learned where it comes from, how much of it there is, or why a dollar is worth as much as it is. Needless to say, it is no more necessary that everyone be an expert on monetary affairs

than it is that he be an expert mechanic, plumber, or obstetrician. Nevertheless, the subject of money, an interesting one in itself, constitutes a field of public interest in which the citizen should be able to form intelligent opinions. Some understanding of the operation of money and banking systems is desirable, even for those who have no intention of entering the banking business.

Sometimes plunging into a description of a complicated thing is more confusing than enlightening. A complete description of a modern airplane engine might be unintelligible to the uninitiated, whereas a description of a simple little engine might illustrate the most important principles involved and thereby provide an introduction to the more complicated engine. Certain outstanding characteristics of money will be illustrated if we imagine at first a desert island and allow a monetary system to develop there. This device will help us see "first things first,"—what money does fundamentally as well as what other things it does in more highly developed systems.

A Hypothetical Money System

Let us assume first that the island is uninhabited until, like Robinson Crusoe, some solitary survivor of a shipwreck arrives. In his economy there is of course no function for money. There is no one from whom he can buy, no one whom he can hire. There is no way to earn money nor any reason to. Saving money would be useless for the same reasons. Everything Crusoe consumes he must first produce, or at least gather. At first, perhaps, it takes all of his time to find enough food and materials for shelter to sustain life. Later, having provided a cabin for himself, he may have time to improve his methods of production. That is, instead of merely picking berries, he may devise a basket so that the next time he does pick berries he may do so more efficiently. Instead of fishing with bare hands, he may produce a fishpole. In other words, he becomes a *capitalist*. His wealth is measured in units of goods, since it is hardly meaningful to speak of their "value" where there is no possibility of exchanges with others.

Barter

Now let us assume an increase in population from somewhere, perhaps another group of shipwrecked people. It is most unlikely that

each would set out to support himself completely by his own efforts. Cooperation would be an obvious way to increase output, so division of labor would immediately arise. Some people might build cabins while others looked for food. At first, no doubt, everything would be done on a communal basis; the food would be divided, the tools jointly owned and used. Sooner or later, however, a system of private property would probably arise. Someone, in his spare time, would make a tool or an instrument or a decoration that belonged to him alone. Other people would find or produce other commodities. There would then be a basis for exchange, and the trading of two items would be an instance of barter. If the first person found that many people wanted what he was particularly adept at making, he might concentrate on producing that one thing and trade his production for other goods that he wanted. The success of such bartering would depend upon his finding someone who not only had what he wanted, but also wanted what he had to offer. This is called the "double coincidence of barter." The necessity for a reciprocal desire might make trading difficult because often enough the owner of what he wanted might not want what he had to offer. "Roundabout" barter might be a solution. That is, he might trade the arrows he produces for an ax he does not want, hoping that he can trade the ax for the fishline he does want.

A Medium of Exchange

In such a society some goods would be highly desirable because they were useful to everyone. If fish were an important item of food, everyone would want fishhooks. Of course, at any time people might want something else more than *more* fishhooks, but the producer of fishhooks could be sure that he could always trade them for something. Somebody would always be willing to give up something, if not much, for another fishhook. In the same way, people would become willing to trade their things for fishhooks, at first simply because they wanted fishhooks, but eventually because they realized that the fishhooks could be traded later on for something they particularly wanted. At this stage in history, fishhooks would be money. We may say that when people traded their goods for fishhooks, they actually *sold* their goods for fishhook money. They wanted the fishhooks not for the hooks themselves but for what they would "buy"

later. This illustrates the fundamental use of money, which is to act as a "medium of exchange." Money facilitates transactions by providing an intermediary transaction and eliminating the double coincidence of barter. As a matter of fact, in some primitive societies, fishhooks actually were used in this way as money.

The development of money might now take several courses on our desert island. If the difficulties of production were conquered sufficiently to permit leisure and the production of nonessentials, people would enlarge their interests to include decorations and adornment. Certain sea shells might become particularly prized for their beauty and scarcity. These shells, with no practical utility at all, satisfy the desire for beauty. Here again, traders might accept these shells in exchange for their goods. They might accumulate, at times, far more than they have any use for, in the knowledge that they can be traded off—spent—in the future. American Indians had such a shell currency, called *wampum*, when white settlers first came to New England. Instead of this development, there might be an evolution of the fishhook currency. When people become willing to take the hooks for trading purposes, they lose interest in the hook as a fish catcher and do not care whether it has a sharp barb or other niceties. In fact, some of the characteristics of a good fishhook would make it difficult or dangerous to carry around. So the producers of fishhooks would give up making them "just right" to catch fish and, as time went on, would simply turn out a rough imitation of a fishhook. Eventually they might lose sight completely of the fishhook origin and make some other convenient shape and size, round or square, and there would be the beginnings of coinage.

Prices and a Standard of Values

As soon as everyone had become accustomed to trading for fishhooks and later "spending" them, they would begin to think of things in terms of how many fishhooks they were worth. Market prices would be set: an arrow would be worth so many hooks, a canoe so many more, and so forth. This would facilitate comparison of the values of goods. Whereas before it had been difficult to say how much more a canoe was worth than an arrow, if canoes should become tradable for 100 hooks and arrows for five, then it would be apparent that a canoe is worth 20 arrows. So a second function

of money would arise: the "standard of values." In somewhat the same way as the inch is a standard of measurement, allowing us to state that a rope 48 inches long is "twice as long" as one 24 inches, the unit of money—fishhook, shell, or dollar—is a standard for measuring value.

Loans and Deferred Payments

Sooner or later on our island loans would arise. Prior to the widespread use of money, people may have borrowed implements, used them, and returned them. If they borrowed consumer goods, say food, they could not return the same goods but would have to replace them. In either case, it might become customary to present the lender with a bonus. With money, however, a borrower might borrow a certain number of fishhooks, spend them for what he wanted, and later repay the same number of fishhooks (the principal) and perhaps a few more as interest. These transactions would facilitate several types of exchanges. By building a dam, some budding captain of industry might see a way of greatly expanding the fish supply both for his own profit and to the benefit of the society. By borrowing enough to live on and to pay others to help him build the dam, he could utilize loans to facilitate the growth of capital in the society. Money would thus be performing two other functions: it would be a "standard of deferred payments," showing how many hooks to return to the lender or to sellers whom he still owes; and it would be "a store of value" during the time it was being saved by the lenders to be lent by them. Any medium of exchange must necessarily be a "store of value" because between the time it is acquired and the time it is spent it retains or "stores" its value.

In our imaginary society we have now developed a money system that illustrates the primary functions of money. Whatever are the historical accidents of the society in question, something becomes a medium of exchange and a store of value, a standard of values and of deferred payments. It is possible that different things may perform separate functions; cows may be a standard of value but not a medium of exchange. Obviously, the better these functions are performed, the better is the monetary system. The ease with which we buy and sell things for money today shows how highly developed is our system of media of exchange. Whether or not money is a good

store of value depends upon whether prices are likely to change very much between the time the money is set aside and the time it is spent. If prices have risen considerably, money buys less. In such a case it has not been a very good means of storing or maintaining value. Our tremendous volume of private and government debts indicates the extent to which modern money allows payments to be deferred. The tendency to value nearly everything in terms of money indicates the degree to which money is our standard of values.

General Acceptability

All of these functions of money point to one characteristic that an object must have before it can become money. It must be generally acceptable. We have seen that, once a monetary system starts, the general acceptability of the money feeds upon itself. That is, people accept fishhooks in exchange whether they want to use them for fishing or not; they accept them as money. The reason they do is that they expect others to do likewise. If the custom grows and becomes strong, the question of being able to dispose of money hardly ever arises. Later we will examine some historical examples of poor money that became generally unacceptable and had to be replaced with some newly designed system. We can summarize the importance of general acceptability by saying that anything generally acceptable in payment for goods and services and to pay debts is money.

Price Levels

We have avoided, up to this point, the question of how many fishhooks might be required in exchange for various other commodities. The question is the fundamental one of the *price level*, whether prices are to be high or low. Although the problem is very complicated in modern economic society, it will pay to examine briefly some aspects of it in our imaginary society. The question involves also the relative values of all other goods, but this consideration is not fundamental to an understanding of the money system. If we assume as before that arrows bring five hooks, the question whether canoes are worth 100 or 150 is one concerning the relative values of arrows and canoes rather than one of the value of money. However, whether arrows sell for one hook and canoes for twenty, or whether they

sell for five and 100, is a question of the value of money. Money is obviously worth less in the second case than in the first.

If fishhooks, when first used as money, are very difficult to make and only a few are made, their owners will probably not be willing to trade many of them for other goods. It would be more economical to make the other goods than to offer "too many" hooks for them. In a primitive society "too many" would probably be more than could be made in the time it would take to produce the things being traded for, modified by the ease or difficulty of different types of work. In other words, if hooks were scarce, prices would tend to be low. If, owing to lack of materials or tools, it should remain difficult to make hooks, while production of other goods rose, people would be willing to offer more of their goods for fishhooks. They would have more goods to trade for other goods and would simply be trading for fishhooks first. The price level would fall still lower, i.e., fewer hooks would buy an arrow or a canoe. In such a situation we would say that things are cheap. If, on the other hand, the production of fishhooks should spurt, owing to the discovery of an iron deposit or a new method of production, the producers would find that, in order to get rid of their output, they would have to offer more hooks in exchange for things they wanted more than extra hooks. Other people would then have more hooks than they wanted to use as such, and would be willing to trade the extra ones for other things. Soon everything would be commanding more hooks in exchange and the price level would be higher. At first the producers of the money would profit because they would have more hooks to trade with while prices were low, but later they would be in about the same relative position as others.

Credit Money

With the addition of one other hypothetical development, our imaginary island will illustrate the fundamentals out of which most modern problems of money (and banking) arise. Suppose that A has saved up a pile of fishhooks for a "rainy day" but that B convinces A he should lend them to him. While the pile of hooks lay idle in A's cabin, it was as if they had never been produced as far as prices and business activity were concerned. They were not offered

in exchange; nobody sold anything for them; they did not circulate. When B gets them the result is the same as if they had been newly produced. More money is offered in exchange. It is possible that somebody produces something to meet this new demand. Possibly B arranges with someone, who would otherwise be idle, to work for him. If everyone is busy, however, B will buy things that other people would have bought. He does this by bidding up prices a little, with the result that others must reduce their purchases. They are more or less "forced," unconsciously perhaps, to give up things to B. When this rise in the price level occurs today following a supply of new money, it is called "forced savings." This factor will play an important role in our later analysis.

Now suppose further that in the meantime A's "rainy day" arrives before B repays the loan. He has no income, let us assume, but he still needs things for consumption. He therefore tries to buy things on credit. He argues that if someone will sell him what he needs, he will pay when B pays him. Perhaps B gave A a note, or an I.O.U., a piece of paper which says "I will pay you 100 fishhooks on the first day of October, 1950. Signed, B." A may offer this paper in exchange for goods and thus transfer B's debt to someone else. In this way, he can buy although he has lent his money; in a sense, it is a way for him to get his money back before B is ready. But the seller, who has turned over goods that he otherwise could have sold for money, has less goods now for his cash customers. Goods will tend to be scarcer and more expensive. Other customers may get the idea from A and may also start "charge accounts." The result is that the island society reaches a stage where fishhooks are not actually needed but credit instruments—promises to pay fishhooks in the future—take their place and perform the functions we have already attributed to money.

Government Credit Money

If we assume now that the island society sets up a form of government, we can develop a system of credit money whereby the "effective" number of fishhooks is greatly increased and prices are pushed up to a generally higher level. Suppose that the private producers of hooks do not provide a perfectly satisfactory supply of hooks. The hooks are not uniform, and some sellers object to accepting light

or crooked or otherwise inferior hooks while there are better ones about. Perhaps a bothersome system of discounts arises whereby, for instance, arrows sell for five hooks generally but six of the inferior hooks are demanded. By common consent, the government takes over a monopoly of fishhook manufacture. If we further assume that the government establishes a fixed price at which it will buy or sell the material from which it makes hooks, we will have the basis for a monetary "standard." This aspect we will ignore for the moment and assume only that people can leave their hooks with the government for safety and reclaim them whenever they so desire. As evidence that the hooks are there, the government gives each depositor a receipt. After a while people do not bother to "withdraw" their hooks when they want to spend them. They simply spend the receipts and the new owners can get the hooks if they want them. Since they, too, probably are willing to spend the receipts themselves, the hooks may never be withdrawn.

Eventually it will occur to someone that the government can give out more receipts than it has hooks, since most receipt holders do not claim their hooks anyway. At some time the government will want to make some extraordinary expenditure, to build a road let us say. Instead of taxing for the purpose, it hires people and buys materials and pays with receipts, or more properly, "notes." Presumably these notes give the holders the right to withdraw fishhooks; but since the notes have become generally acceptable in trade, and since they are easier to carry, there is very little actual withdrawal. Instead, the first recipients spend the notes, and then the notes continue to circulate. This again provides an increase in the supply of money. A note for one hook is probably called a hook, so it is said there are more hooks in circulation. If the road or other public improvement results in production of enough additional goods, these new hooks may not lead to higher prices. If the available supply of goods stays about the same and people have more money to spend, they will force up prices as before.

At this stage we have most of the elements of a modern monetary system. We have in circulation the original fishhook money and a supply of substitute money which circulates and is used in the same way as the fishhooks. The credit money consists of promises of the government to pay on demand "real" money, but since the promises

are seldom redeemed the effective supply of money is that much larger. The biggest gap in the picture is the lack of banks. A description of the way in which the existence of banks changes the situation will take up a large portion of this book. Today the existence of banks is probably the most important element in the monetary system. Their functions are best understood after one has obtained a grasp of what money fundamentally is.

Historical Examples

In order that the foregoing description of a monetary system on an imaginary island may appear to have a closer relationship to the way in which money systems actually develop, let us look briefly at actual history before turning to an explanation of bank money. In very early times various commodities which happened to be highly exchangeable took on the functions of money. Where hunting and fishing were the chief occupations, skins, feathers, arrowheads, and similar items became media of exchange. Shells seem to have been adopted as money by several early civilizations. Where pastoral pursuits prevailed, cattle served as a common measure of value in equating trades even though cows would not make ideal media of exchange. The word "pecuniary" is derived from the Latin *pecus*, meaning "cattle." "Capital" and "cattle" are both derived from *caput* ("head"), as animals were counted "by the head."

An excellent example wherein a common commodity first became highly acceptable and then actually served as money is tobacco in colonial Virginia. Planters regularly sent tobacco to the coast towns, where it never failed to exchange for imports from Europe or the West Indies. Before long, anyone was willing to accept tobacco in exchange for goods or labor since it was unfailingly tradeable for other things which a person might want. Because more people willingly accepted it in exchange, even more would do so in the future. Tobacco thus grew in general acceptability.

In ancient China, knives and pieces of cloth, being objects of widespread demand, attained a very high degree of exchangeability. About the twelfth century B. C., there gradually came into use miniature models of the knives made of metal, which served as media of exchange, but which had no use as commodities.

In time the sizes of these miniature knives were so reduced that the entire blade and most of the handle disappeared, leaving nothing but the ring at the end of the handle, which appears to have been the origin of the Chinese "cash."¹

The natives on the island of Yap at one time set very high values on certain stones. These stones became their measure of value, but as some of them were very large and heavy and embedded in sand, they were difficult to use as a medium of exchange. The natives simply allowed the ownership of these stones to change; the stones stayed where they were, but the ownership was transferred by being "spent."² The similarity between this use of stones and our use of bank deposits is striking.

The collection of various kinds of money maintained by the Chase National Bank includes the following list of commodity moneys:

Grain, man's first money
Spice and amber money of the Baltic
Rock salt money of Asia and Africa
Fishhook money of the Eskimos
Tobacco, Virginia Colony and South Seas
Nails, Scotland and New England
Soap, Mexico
Hard cheese, China
Woodpecker scalps, Oregon
Cocoa beans, Mexico
Grass mats, South Seas
Silk, Mongolia
Cotton cloth, money today in the Congo
Beaver and coon skins, American Northwest
Gold dust and nuggets, the days of '49
Whiskey, part of pay in U.S. railroad building
Musket balls and flints, U.S. Colonial
Brick tea money of Mongolia, Tibet, and Siberia
Bread money of Alaska
Bamboo money of China
Gum drops, Eskimos
Chocolate disc currency of Mexico³

¹ E. W. Kemmerer, *Money*, New York, The Macmillan Co., 1935, p. 8. By permission of The Macmillan Company, publishers. Kemmerer shows drawings of this knife money and of fishhook money in different stages of development.

² W. H. Furness, 3rd., *The Island of Stone Money*, Philadelphia, J. B. Lippincott Co., 1910.

³ Chase National Bank, *Moneys of the World*.

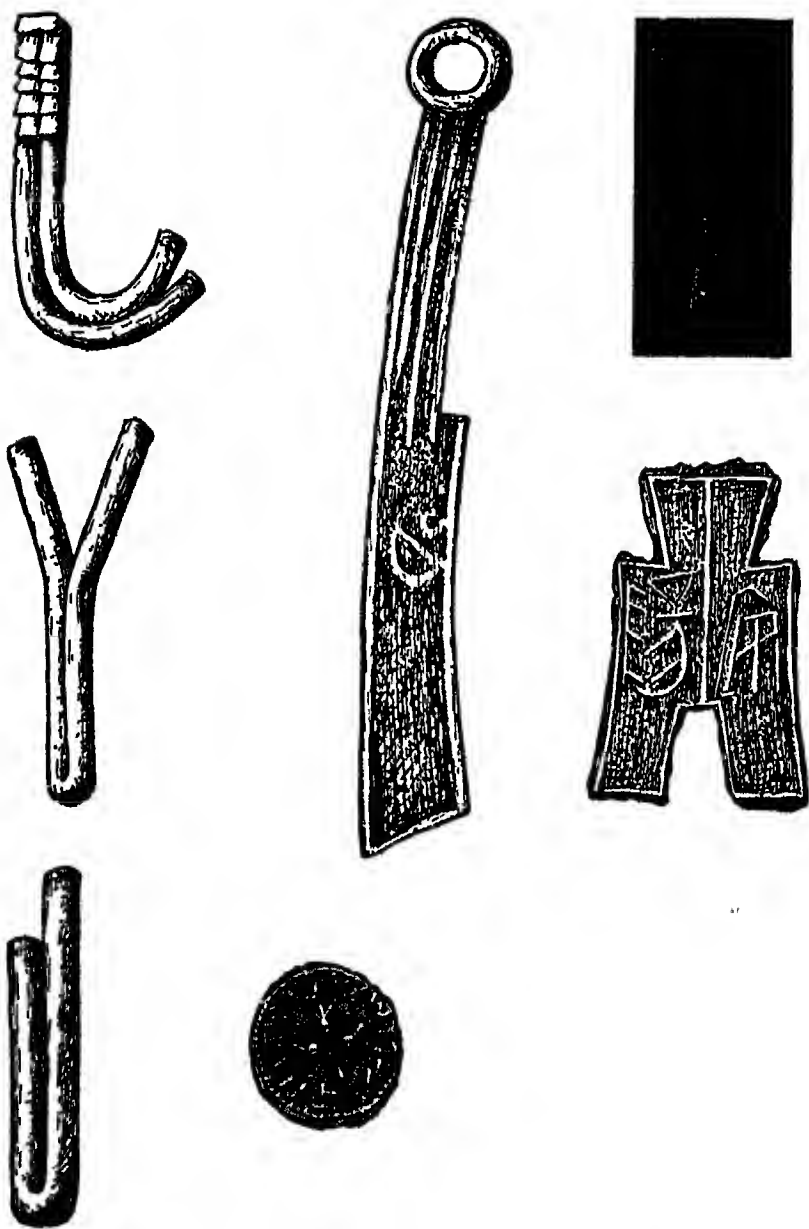


FIG. 1.—Evolutionary Forms of Money. Drawings on the left illustrate the evolution of fishhook money. *Center:* Chinese knife money and the shekel. The shekel was originally a weight, like the British pound. *Right:* Chinese spade and dress or bell money, and stone money of the Island of Yap. (Acknowledgments: fishhook money from *Money* by E. W. Kemmerer; knife and dress money from the collection of B. U. Ratchford; others from the Chase National Bank Collection of Moneys of the World.)

The Nature of Money

Cigarette Money

It is often said of some essential object that if it did not exist someone would soon invent it. At various times the normal supply of money has been unavailable, and people have turned to substitutes. One of these examples has been described by an ex-prisoner of war to illustrate how some generally acceptable commodity comes to be used as a medium of exchange when the alternative is barter.⁴ At first, prisoners traded their possessions in order to increase their supplies of those things particularly desired by each. Nonsmokers naturally were willing to trade their cigarette rations to smokers for food or other items they preferred. Individual preferences for certain foods made mutually advantageous trades obvious. The convenience of trading for some article of wide use soon became obvious also. Trades were made for cigarettes even by nonsmokers because cigarettes could be traded for other things. As a result, cigarettes came to serve not only as a medium of exchange but as a standard of value: barter might still take place, but on the basis of relative values in terms of cigarettes arrived at in "the market."

By the end of a month, when we reached our permanent camp, there was a lively trade in all commodities and their relative values were well known and expressed not in terms of one another—one didn't quote bully in terms of sugar—but in terms of cigarettes. The cigarette became the standard of value. In the permanent camp people started by wandering through the bungalows calling their offers—"cheese for seven" (cigarettes)—and the hours after parcel issue were Bedlam. The inconveniences of this system soon led to its replacement by an Exchange and Mart notice board in every bungalow, where . . . sales and wants were advertised. When a deal went through, it was crossed off the board. The public and semi-permanent records of transactions led to cigarette prices being well known and thus tending to equality throughout the camp, although there were always opportunities for an astute trader to make a profit from arbitrage. With this development everyone, including non-smokers, was willing to sell for cigarettes, using them to buy at another time and place. Cigarettes became the normal currency, though, of course, barter was never extinguished.⁵

In the permanent camps trading was sometimes highly developed. In the camp described by Radford, a shop was established where sur-

⁴ R. A. Radford, "The Economic Organization of a P.O.W. Camp," *Economica*, XII, 48, Nov., 1945, p. 189.

⁵ *Ibid.*, p. 191.

plus articles could be left for sale at fixed prices in cigarettes. "Only sales in cigarettes were accepted—there was no barter—and there was no higgling." ⁶ This shop was operated as a public utility, but there was also private enterprise. One prisoner operated a coffee stall, buying material and labor at market prices (in cigarettes) and selling coffee, tea, and cocoa at two cigarettes per cup. Professional traders entered business and traded on their own account for profits or made trades for commissions.

Many sales were made for credit. Posted offers might specify a sugar ration for sale for four cigarettes "now" or five next week. The price level fluctuated as in normal life. A new ration of cigarettes (a new supply of money) raised prices as cigarettes were relatively more plentiful then and prisoners were more willing to dispose of them.

Several hundred thousand cigarettes might arrive in the space of a fortnight. Prices soared, and then began to fall, slowly at first but with increasing rapidity as stocks ran out, until the next big delivery. Most of our economic troubles could be attributed to this fundamental instability.⁷

Many other examples could be added to illustrate the same story wherein barter gives way to trading for some highly desirable commodity which in turn takes on added desirability simply because people want it not only for itself but for trading purposes. The original use of the commodity may then be forgotten and its monetary use predominate. In such ways did commodity money develop.

Money as Debt

There are widespread notions that money is some particular thing or that unless there is a connection between money and gold, or some other standard metal, money will tend to be valueless. It cannot be too greatly emphasized that modern money is almost universally some form of debt. Money is debts that circulate and that are generally acceptable in payment of other debts. It will be emphasized in succeeding chapters that commodity money as described above has been almost completely superseded by debt-money, more often called *credit money*. Some debts, particularly those of government and of

⁶ *Ibid.*, p. 192.

⁷ *Ibid.*, p. 195.

banks, have become generally acceptable in much the same way that commodities did years ago.

That this idea is not particularly revolutionary is illustrated by the many instances in which debts commonly have *limited* acceptability. In a poker game, for example, when players buy chips from the bank, the chips are evidences of what the bank owes the players. The players exchange chips all during the game in settlement of debts, and make final settlement with the bank at the end of the game. The point is, however, that each debt is completely settled by the transfer of these chips which are merely evidences of still other debt. No one stops to inquire what the chips are made of, whether they would be as valuable if they were melted, or whether the government is bound to sell gold for them at a fixed price.

Money as Counters

Extending this idea further, we find that money often has no physical constitution at all. A demand deposit, for example, is merely a debt that the depositor's bank owes him; it is not something he can carry around or pinch or look at. He can carry a check-book and he can look at the figures in it, but these are evidences that the debt exists. The deposit would still exist even if he lost the check-book. In this view, money is merely figures that we use to keep count of our purchasing power. A farmer sells 1,000 bushels of grain and gets a check for \$1,000, which he deposits in his bank. The buyer's purchasing power is transferred to the farmer. The dollars are merely figures in the accounts of the bank which tell who has the counters at the moment. If the farmer spends \$500 for a tractor, he still has \$500 of the deposit left, and the other counters move on to the account of the tractor dealer.

A further consideration of this idea shows how impossible it is to think of dollars as any "real" things. A bank deposit is like a pail of water. Starting with an empty pail, we pour in six glasses of water. If we later take out a glassful, how are we to say which of the six it is? Similarly, if we deposit checks for \$50, \$30, \$20, and \$75 in a bank account and then withdraw \$15, which dollars have we withdrawn? There is no answer, of course, simply because the dollars were not things but amounts of debt. The deposits increased the

bank's debt to us by \$175 and the withdrawal reduced the debt by \$15.

Ration Currency

During the war the ration coupons and tokens gave us an illustration of how "counters" come to have value. Using legal prices as a measure, there were more dollars during the war than there were civilian goods being produced; hence, the government restricted our spending by requiring that money must be supplemented by ration "money." In a sense, we then needed two kinds of money. Now suppose, instead, that we had completely collectivized the economy and that the government had "taken over" all industry and business. Let us suppose further that every citizen was paid \$200 a month by the government—everyone, of course, would be a government employee. The government would also see to it that the "right" amount of goods came to the market per month so that the expenditure of \$200 by everyone would approximately take off all the supplies. The government would take back everyone's \$200 as the goods were sold, and then at the end of the month everyone would draw his \$200 pay again. While this example is oversimplified in that it ignores what would happen if there were saving or hoarding or several other developments, it does illustrate that the \$200 are merely counters representing each person's purchasing power, which are used up in exchange for the goods he wants to buy. In such a system, the ration currency would supplant money as we know it and, in fact, become the money of the society.

Sources of Confusion

The reason for confusion and misunderstanding about the nature of money is largely due to our careless use of words. The word "dollar," for instance, has several meanings which correspond to the different functions of money, yet we seldom stop to think of the changing meaning in different uses of the word. Economists have long been aware that their science sometimes lacked precision because there is no special terminology for the science as there is for many natural sciences.

We usually use the word "dollar" and the words "dollar bill" interchangeably. It so happens, through custom and usage, that we

carefully say "yardstick" when that is what we mean. A mother says to her child, "Bring me the yardstick"; she does not say, "Bring me a yard." Similarly, we often ask for "five gallons of gasoline," but sometimes the meaning is clear if we merely say, "Put in five gallons." Now, the meaning is clear simply because the "of gasoline" is assumed; without it the sentence is meaningless—five gallons of what? A gallon is merely a unit of measurement; there are containers that will hold a gallon (of something), but there is no such *thing* as a gallon.

If we should say "dollar bill," "silver dollar," or the like when we mean a physical thing representing a dollar's worth of things, we would seldom be confused. The different shades of meaning attached to the word may be seen in these sentences:

1. "What will you take for it?" "A dollar."
2. "He is worth half a million dollars."
3. "I have \$10,000 in real estate."
4. "I have \$5,000 in the bank."

These sentences mean:

1. "I will take a dollar bill for it."
2. "He owns things worth half a million dollars."
3. "I have real estate that cost \$10,000," or perhaps, "My real estate is worth \$10,000."
4. "The bank owes me \$5,000."

III

THE NATURE OF BANKING

IN Chapter I we saw how a monetary system might be imagined to develop. It was pointed out that the role of banks was ignored, which left a serious gap in the description of how a complete monetary system functions. In this chapter we will carry on the development of financial institutions on the imaginary island, but we will make one concession to reality and assume that in the meantime the name "dollar" has somehow or other been invented and applied to the units of fishhook money.

Storing Money

As soon as society on the island reaches a stage in which people sometimes have more dollars than they intend to spend in the near future, there will be a problem of the safekeeping of this money. By the process of economic development and the division of labor, someone may take upon himself this function. Presumably this person would be a trustworthy, respectable citizen to whom the others could entrust their money for safekeeping. Originally he might merely make available to individuals safe places on his property where they could place their money and come to get it when they liked. In this activity he would resemble a modern safe-deposit com-

pany, which rents lockboxes and vault space to the public. Later, he might take actual possession of the dollars, mingling them, perhaps, in some safe place. In so doing, he would assume the obligation of returning the same number of dollars, but not necessarily the same dollars, to each depositor.

Several developments will probably take place as the banking system evolves. Those most likely to happen first are: (1) As in the case of government money, described in Chapter I, the receipts which the banker gives for deposits begin to circulate. (2) The banker realizes that he may use or lend some of the dollars left with him because he always seems to have a stock of them on hand. (3) Later, rather than lending actual dollars that have been deposited with him, he gives borrowers receipts (notes) instead. (4) A system of checks will supplant some of the notes.

Bank Credit

How paper evidences of dollars may begin to be used in place of the dollars originally used has been touched upon in Chapter I. As a matter of convenience, sooner or later some seller will offer to take in exchange for his goods the receipts that the buyer has, because if he took actual dollars he would only redeposit them. After this practice becomes customary, the paper is used to such a great extent that to all intents and purposes the notes *are* dollars and not just warehouse receipts for dollars. They are the medium of exchange; they buy goods, pay debts, measure values, and perform all the functions of money.

While this is happening, it will become apparent to the banker that on any given day some people withdraw some dollars and other people deposit some. Most likely the two amounts do not balance exactly, but the incoming deposits tend to offset his loss of dollars by withdrawals and on some days even exceed the withdrawals. He may notice that over a long period of time the withdrawals never exceed new deposits by more than a certain amount. Hence, he always has a stock of dollars lying idle. It occurs to him that if he always keeps a "reserve" adequate to cover any excess of withdrawals over new deposits, he might lend the idle stock to others. Furthermore, as the loans are repaid the funds will be available as reserves if needed. If not needed, they can be lent over again.

To use accounting terminology to describe the situation, if when the banking business was first started, the banker took in 100 dollars, his balance sheet would read:

<i>Assets</i>	<i>Liabilities</i>
Cash \$100	Deposits \$100

Later on, when he started the system of giving receipts so that depositors had a claim to a certain number of dollars rather than to the specific dollars they deposited, the word "deposits" might read "receipts outstanding." After he has decided to lend some of the actual dollars, when he summarizes the state of his business he will find:

<i>Assets</i>	<i>Liabilities</i>
Cash \$ 50	Receipts out-
Loans 50	standing \$100
<u>\$100</u>	

In other words, he has taken in \$100 and given receipts for this amount, and he has lent 50 of the dollars entrusted to him. At this point, when the banker has lent half of the money deposited with him and still has the other half in his vaults, he is said to have a 50% *reserve ratio*. That is, the reserves immediately available to meet withdrawals are 50% of his deposits.

Notes

It will also occur to the banker in time that, since people spend and accept his paper evidences of dollars as freely as they spend and accept the dollars themselves, the next time he makes a loan he might as well write out a receipt. The word "receipt" means, of course, evidence of something received. A more proper word for these new evidences is "notes" since he has not received a deposit from the borrower. A receipt is not only an evidence of the deposit but a promise to repay the number of dollars deposited. In fact, that is how such paper comes to circulate; people are as willing to take the promise as the original dollars. Notes likewise are a promise to pay dollars, and their circulation depends upon the same willingness to accept the banker's promise in place of the original currency. In this case, assuming a new \$50 loan, the balance sheet would change from the preceding one to:

Assets

Cash	\$ 50
Loans	100
	<u>\$150</u>

Liabilities

Receipts or	
Deposits	\$100
Notes	50
	<u>\$150</u>

As long as the loan is unpaid, there is an increase in the number of dollars in the money supply of \$50, the amount of the loan, in the form of notes. If, when the loan is repaid, the same amount is lent again, the increase in the money supply becomes permanent. In this way the banker has "created" some more money. In the process his reserve ratio has fallen to $33\frac{1}{3}\%$, because the \$50 reserve is one third the combined liabilities of deposits and notes, both of which are rights or claims to the dollars in reserve.

The receipts and notes might be printed to appear identical. However, it happens to be more realistic to assume that the receipts are in such a form that they are not so easy to spend as the notes. We come back to this point in a moment in considering bank checks.

The use of notes will increase the claims outstanding against the bank's reserves, but at the same time it may reduce the chances that people will actually want the dollars. A depositor who wishes to withdraw some of his money may now be quite willing to take bank notes. His receipts give him a claim to a certain number of dollars, but since the notes have come to be considered and used as dollars they are as satisfactory to him. In this case the banker merely writes some more notes with which to pay him. This transaction will increase his note issue but reduce his deposits, since the depositor no longer has his deposit at the bank. If the withdrawal is for \$10, the balance sheet will change to:

Assets

Cash	\$ 50
Loans	100
	<u>\$150</u>

Liabilities

Deposits	\$ 90
Notes	60
	<u>\$150</u>

Checks

Since we have assumed that the receipts originally issued are transferable, we already have the germ of a checking system. However, we noted that this assumption was not very realistic, because the re-

ceipts, which presumably were for the amounts deposited, would not be for the exact amounts that people wanted to spend. A person could solve this difficulty by purchasing goods and giving the seller a written order against his bank instructing the bank to transfer a certain amount from his account to that of the seller. Such orders would be drafts, or checks. Their use would be advantageous because they would allow buyers to use the exact amounts they desired to spend. Checks also would make unnecessary the withdrawal of a certain number of dollars before they could be spent and the deposit of the money by the recipient. As the use of checks develops, it provides the island society with a general means of transferring purchasing power from person to person in exchange. The role of the banker becomes largely that of keeping track of who owns the deposits. He is continuously subtracting amounts from the accounts of those depositors who have drawn checks and adding them to the accounts of the recipients of the checks.

Before the banker knows that a depositor has drawn a check, the check must of course be brought or sent to him. That is, the recipient of the check either deposits it to his account, as we have been assuming, or he exercises his right to withdraw cash. To the extent that he deposits the checks, we have a situation more refined but similar to the earlier stage when it first became apparent that withdrawals and deposits roughly balance. Drawing a check is similar to making a withdrawal, but the related deposit by the recipient exactly offsets it. The total volume of deposits is thus unchanged by the transactions financed by checks, and the banker merely handles a sort of revolving fund consisting of his liabilities to the public. The cash and loans which comprise his assets are unchanged.

We have purposely postponed until a later analysis of real banks in modern society any reference to the very practical question of how the banker is to make his living by performing these functions. That description will necessarily include many details, in the interests of reality, that we can afford to ignore in the imaginary society because they do not change the fundamental principles involved. These principles stand out more clearly if we assume just enough of a banking system to illustrate them and no more. For this reason we have also postponed until a later chapter the complication of having more than one bank, but that again is only a complication. We will find,

as might be guessed, that the banks as a system perform fundamentally the same job as would a single, monopolistic, bank.

Historical Development

Actually, the history of the development of banking has not been radically different from the hypothetical development described above. In the course of history, however, various stages have merged with each other, and at times banking has retrogressed as well as progressed along with civilization in general.

Ancient

In the highly developed society of the ancient Greeks, banks attained considerable importance. Foreign traders obtained loans from Greek bankers and also deposited funds with them. The bankers received deposits of coins from many places, and one of their functions was to provide borrowers with money suitable for the area where it would be spent. Debtor and creditor appeared together at the Greek bank to arrange for the transfer of funds between them. The Romans, who learned banking from the Greeks, developed a system of deposit banking wherein interest was paid for time deposits, and noninterest-bearing deposits could be transferred by written orders. This, of course, closely resembles our modern system.

Medieval

During the Middle Ages banks as we know them did not exist, but several developments took place that laid the foundations for the later growth of modern banking. The basic function of the forerunners of banks was that of safekeeping. Although there was little money to begin with, there being few monetary exchanges in the typical medieval community, a few people, principally traders, did accumulate currency. Wealth, particularly in the forms subject to robbery and brigandage, was not safe, and wealthy people with silver, gold, or jewels sometimes placed their wealth with monks for safekeeping. The monks did not engage in the frequent wars of the period and the monasteries were relatively safe havens. These deposits gave the monks funds in addition to those they accumulated through other peaceful pursuits and enabled them to make loans.

A striking development in the direction of modern banking was

made by the Knights Templars. This militant order established offices from Western Europe to the Holy Land as a result of the Crusades. The Crusades themselves required funds, and so the Knights became proficient in raising and handling money. During most of the thirteenth century in France, the order managed the French Royal Treasury, raising taxes, holding funds, and making payments on order from the Crown. The Knights were thus owners of vaults and strongboxes and in a position to receive deposits from merchants and others. Sometimes they merely kept a strongbox for a wealthy individual for a fee, but more often they received deposits which they could lend during the period of the deposit. Hence they became an important source of loans. They were particularly useful in arranging transfers of funds along the route of their offices. Traders could deposit funds at one office in exchange for documents permitting them to withdraw funds at another office, thus eliminating the dangers of carrying valuables en route.

The Knights were later supplanted by the Jews as the chief financial dealers and still later by the Lombards. During the Middle Ages the Church frowned on borrowing and lending and considered interest as usurious and sinful. The Jew was free from the restrictions of the Christian church in this respect and at the same time was often barred from other occupations. Owing to frequent persecutions, Jews also were inclined to accumulate their wealth in easily movable forms—gold, silver, jewels, silks, and the like. As trading developed, Jews more and more entered the business of money changing and then of lending. The heterogeneous nature of the numerous coins in existence made necessary some agency that would buy and sell money; that is, exchange one kind for another. This business led to accepting deposits and to lending to merchants. Other loans were made to rulers, with mortgages or pledges of crown property as security.

The development of fairs, with the attendant journeys of merchants who went from one fair to the next, led to widespread use of bills of exchange. One merchant would sell to another and draw a bill on the second. It further developed that the buyer might arrange for the seller to draw a bill on a moneylender instead. It became customary to draw bills so that they would mature at a future fair at which merchants planned to meet and where the buyer would be in a position to pay his bills. This naturally led to clearing arrangements

at the fairs whereby the merchants could cancel bills between themselves and pay the net differences.

The Lombards were merchants who traded all over the known world and combined banking with trade. As England rose to be the preeminent trading power, the Lombards settled in London and used in their trade the funds deposited with them.

In England, the medieval goldsmiths also provided early examples of banks. Since the goldsmiths normally dealt in precious metals and had the facilities for their safekeeping, other people adopted the practice of leaving their money with a goldsmith. Here again, these deposits eventually led to the lending of deposited funds. The earliest use of bank notes appears to have developed much later, towards the end of the seventeenth century, when goldsmiths provided notes in exchange for deposits. An early example reads:¹

Nov. 28, 1648

I promise to pay the Rt. Honble, Ye Lord North
and Grey, or bearer, ninety pounds at demand

For Mr. Francis Child
and myself, Jno. Rogers.

These notes were, of course, merely longhand statements, although within a few years printed forms came into use.

Modern

Sometimes the functions of money changing and transferring funds on deposit were provided by municipal institutions. Early examples were the Bank of Barcelona in 1401 and the Banco di Rialto (Venice) in 1587. In 1609 the Bank of Amsterdam was founded and in 1619 the Bank of Hamburg. In these banks there arose so-called "bank money" which was different from any of the moneys deposited with the bank but became rather a common denominator for them. Bank money came to be the recognized medium of exchange between traders who bought it by depositing whatever coins they accumulated in their trading. The bank money was then transferred between them on the books of the bank.

Before 1609 the great quantity of clipped and worn foreign coin which the extensive trade of Amsterdam brought from all parts of Europe, reduced the value of its currency about nine percent below that of good money fresh from

¹ H. D. MacLeod, *Theory of Credit*, London, Longmans, Green & Co., 1893, I, 375.

the mint. Such money no sooner appeared than it was melted down or carried away, as it always is in such circumstances. The merchants, with plenty of currency, could not always find a sufficient quantity of good money to pay their bills of exchange; and the value of those bills, in spite of several regulations which were made to prevent it, became in a great measure uncertain.

In order to remedy these inconveniences, a bank was established in 1609 under the guarantee of the city. This bank received both foreign coin, and the light and worn coin of the country, at its real intrinsic value in the good standard money of the country, deducting only so much as was necessary for defraying the expense of management. For the value which remained, after this small deduction was made, it gave a credit in its books. This credit was called bank money, which, as it represented money exactly according to the standard of the mint, was always of the same real value, and intrinsically worth more than current money.²

Originally, the deposited funds could not be lent, but eventually temptation became too strong. As Adam Smith described the arrangement,

The Bank of Amsterdam professes to lend out no part of what is deposited with it, but, for every guilder for which it gives credit in its books, to keep in its repositories the value of a guilder either in money or bullion. That it keeps in its repositories all the money or bullion for which there are receipts in force, for which it is at all times liable to be called upon, and which, in reality, is continually going from it and returning to it again, cannot well be doubted . . . The city is guarantee that it should be so. The bank is under the direction of the four reigning burgomasters, who are changed every year. Each new set receives it upon oath, and delivers it over, with the same awful solemnity, to the set which succeeds it.³

However, it eventually developed that the coin and bullion reserve was lent, and, in spite of Adam Smith's glowing description, to the city of Amsterdam itself as well as to the East India Company. When the latter failed in 1794, the bank had lent so heavily to the company that the bank fell too.

These examples of early banks serve to illustrate how bank credit in the form of bank notes or transferable deposits evolves as a substitute for commodity money, as was illustrated first by the imaginary bank. Generally speaking, the actual development of banking has been a transition from money-changers to moneylenders. Circumstances which made it inconvenient for traders to use various

² Adam Smith, *Wealth of Nations*, Book IV, Ch. 3. (10th ed., p. 221).

³ *Ibid.*, p. 231.

existing kinds of currency led to the deposit of such money with money-changers, who at first provided the funds desired. Later, as the custom of transferring deposits grew, it became possible to exchange bank credit or deposits for the deposited currency. Still later, the money-changers discovered the possibility of lending out at interest some of the money deposited with them. On the imaginary island we found the original commodity money, government credit money, and bank credit money all circulating side by side. Finally, we may envisage a situation where the commodity money drops out of circulation. This could develop because of its lack of convenience as compared to the other forms of money, and to a large extent this development did take place. In this country, however, gold was suddenly withdrawn from circulation by the government in 1933, as will be explained in Chapter XXVI.

To summarize the principles illustrated by the imaginary system described above, it should be emphasized that credit money—the government credit and bank credit in the form of notes—supplanted the commodity that was originally used in transactions. Furthermore, bank credit in the form of deposits also partially supplanted the other forms of money. The only difference is that the bank deposits, which cannot circulate physically, are transferred from one owner to another by the medium of checks. Hence, people think of government or bank credit as money itself and not as claims to money. A "dollar" is any of the forms of credit money which one person gives to another in settlement for a claim for a dollar.

A dollar "on deposit" at a bank is just as much a dollar as any other. This is true, not, as people often think, because the bank has a dollar for the depositor to come and get, but simply because the depositor can spend the dollar or pay a debt with it by transferring it to someone else by check. Thus bank debts in the form of deposits constitute the largest part of a modern money supply, and transactions are settled by the transfer of these debts to a larger extent than by any other method.

In most monetary systems, however, there may be certain distinctions between the original commodity money units and the credit dollars, a point which brings us to a consideration of standard money.

III

STANDARD MONEY

STANDARD MONEY is the money that a society has chosen to be its standard of values. Historically, the most important standard has been gold although there are numerous examples of use of other commodities. The significance of standard money lies in the fact that through the development of monetary systems the functions of standard of values and medium of exchange tended to be separated, so that standard money has come less and less to be a medium of exchange. The various media of exchange have been supposed to "represent" the standard money in one way or another, and many problems of money have arisen from this dual system as practiced by various countries. This chapter takes up the underlying theory of monetary standards and their development.

A Hypothetical Standard

In Chapter I it was noted that the government of the island society might assume the monopolistic production of dollars (in some more or less evolutionary form of fishhooks). If the government were to do so, it would immediately be faced with the problem of how many dollars to manufacture. From a consideration of cost, it is almost immaterial to the government how many are produced,

because presumably it acquires a certain amount of metal and forms the metal into a dollar. The metal "should" be worth a dollar before it is made into a dollar; that is, people would be willing to pay a dollar for that amount of metal for its other uses in industry or for its artistic uses. Let us assume that the government decides to make each dollar out of an ounce of a particular metal because that metal is selling for about a dollar an ounce. Hence, the metal, now as before, is worth the same as a dollar, and the government neither gains nor loses by producing dollars.

There are several reasons why this situation is likely to be true, or nearly so. In the first place, if the production of dollars was a private business in the past, dollars were probably made out of metal only when profitable and competition between various industries should have made the profit in dollar-making about the same as that in any other industry. Consequently, there should not normally be any unusual profit in the business of making money. The cost of the metal and of the process of manufacture should be nearly a dollar, and since the metal is the principal cost, when the government takes over the business it will find that it takes nearly a dollar's worth of metal to make a dollar.

Of course, now that the government has taken a monopoly of the business, there is nothing to prevent it from making dollars out of less material, say ten cents' worth. However, the government, in our original assumption, is interested primarily in producing a uniform supply of dollars and not profiting in the process. Furthermore, people are used to dollars that contain about an ounce of metal, and they might suspect the value of dollars that contained less. Finally, the government might be positively interested in setting up a system whereby a dollar would be made to be worth an ounce of metal. The surest way to produce this result is actually to make each dollar out of an ounce of metal.

Automatic Control of Supply

The answer, then, as to how many dollars to produce would probably be left to market forces; as long as the government could buy metal for a dollar or less an ounce, it would do so and produce dollars. If the market price should rise above a dollar an ounce, it would cease production. It follows that the market price will always be

very close to a dollar an ounce. If producers of the metal can always sell their output to the government, prices cannot sag very much in other markets, or the output will flow to the government, a situation which will create scarcities in other uses and force the price back up. But if the government ceases to buy when the price is above a dollar, the withdrawal of its ordinary purchases will tend to force the price back down.

If the government takes a further step and agrees to buy all of the metal offered to it at a fixed price of a dollar an ounce, then the price cannot sag significantly below a dollar at any time, because sellers always will have the option of selling to the government. The government might go even one step further and offer to sell metal for a dollar an ounce. In this case, the price cannot rise above a dollar, either, because buyers can always obtain metal from the government at that price. At least, they can as long as the government has previously obtained metal for sale.

The actual transaction of selling metal to the government may take several forms. The most direct method would be that the government coin the dollars out of the metal just sold to it—to return the same metal as money. In other words, the government would establish a system of “free coinage,” meaning that citizens are free to have their metal coined at the rate of one ounce to the dollar. The government might make a slight charge or fee for this service so that free coinage might not be free in this sense. Such a charge is called “brassage.” When it is made, and to the extent that it is made, the person bringing metal does not get quite a dollar for each ounce of metal offered. Another way that the transaction may take place, and a more likely one after people have discovered the use of government notes, is that the government print new notes to give in exchange for the metal. These notes would actually be receipts or certificates certifying that the government has the metal and will exchange it for the certificates on demand. The result on the supply of dollars would be the same as before; for every ounce of metal sold to the government there would be another certificate. Finally, if bank deposits are widely used as money, the government may buy metal by check. The seller of the metal thus acquires the bank deposit previously owned by the government. To replenish its deposits, the government coins

the metal or issues certificates and deposits the coins or certificates in the bank so that the number of dollars is increased as before.

If the government is attempting to keep the dollar equal in value to an ounce of metal, it will, as stated above, not only buy but sell the metal at that price. One other privilege must also be given to the holders of coin-dollars. They must be free to melt their dollars in order to obtain metal, in the same way that they are free to have their metal coined to obtain dollars. By this system of free coining or melting and buying or selling, a dollar in whatever form it may be—coin, government note, bank note, or bank deposit—must always be worth very nearly what an ounce of metal is worth. When a dollar is deemed to be worth less than an ounce of metal, the holder can easily “trade” it for the metal. If a dollar is worth more, the holder of metal can convert it into dollars, decreasing the supply of metal and increasing the supply of dollars.

The word “metal” has been used purposely throughout this discussion because many people seem to have the idea that only gold should be or has been used for purposes of a monetary standard. It is true that gold has certain advantages over other materials, and in the historical development of money it has been used as the standard money more than any other metal. However, the principles of standard money would apply to any commodity that was “monetized” as the metal was in the foregoing description. The government could conceivably monetize anything, and in fact sometimes approaches doing so by price stabilization schemes for some commodity or other.

A monetary standard, then, involves (1) a definition of the monetary unit, such as the dollar, in terms of a certain amount of a commodity, and (2) a system whereby the commodity may be freely converted into monetary units and vice versa. The essence of such a standard is that whatever the value of the commodity unit is, such will tend to be the value of the monetary unit, since they are interchangeable.

Value of Standard Money

A good monetary standard would be one which keeps the value of the money unit relatively stable. A monetary system in which prices are high one year and low the next would be disruptive to

business activity, to people's savings, and to all sorts of calculations. A government therefore would probably try to pick out a commodity the value of which is more stable than that of other commodities. Thus, historically gold, and silver to a lesser extent, have been widely used. In addition, the early beginnings of money in lands where trade and commerce eventually developed usually involved gold. The reasons why gold was among the first kinds of money are not necessarily the same as those that led to its adoption as standard money; the scarcity and beauty of gold made it generally acceptable at an early date. It is malleable but long-wearing; that is, it can be formed into coins more easily than some other metals, but will wear a long time without losing its value through wear and tear. The probable reason why gold was used as an early monetary standard is that gold is so indestructible and also so scarce that the total supply does not usually change rapidly. The world's total supply of gold, accumulated for centuries, is not changed very much by the production of a year or two. For this reason, gold has tended to be more stable in value than most other metals.

If we examine briefly what might happen if some commodity other than gold were monetized, we can see how this relative stability tends to stabilize the value of the dollar in the system described above. Suppose the government should monetize cotton, and set up a cotton standard, with a "mint price" for cotton of ten cents per pound. The production of cotton fluctuates considerably with natural conditions; some years there is a big crop and in other years the crop fails. Furthermore, conditions in other countries lead to increased or decreased sales abroad. The competition of other fabrics and fibres influences the value of cotton also. When the crop is big and foreign demand is light and other materials are encroaching on the market for cotton, the price tends to fall fairly drastically. Cotton farmers could protect themselves from selling below ten cents by selling to the government, and they would receive in the process new dollars, one for every ten pounds. They would presumably spend these dollars on other goods, with the result that there would be a tendency towards increased business and higher prices in other parts of the economy. On the other hand, when the crop is short and foreign demands are large and other uses of cotton are growing, the price would tend to be high. Not only would cotton farmers not sell

to the government, but users of cotton and speculators could buy from the government at ten cents. This would reduce the supply of money and tend to cause lower prices elsewhere. As long as the government's supply of cotton lasted, these government sales would tend to hold down the price of cotton, but if the discrepancy existed long enough the government would run out of cotton and people could no longer "redeem" their money. The country would be "forced off the cotton standard," and the price of cotton would be free to rise above ten cents. The use of cotton, then, would probably lead to drastic changes in the supply of money and thus to changes in the price level. The result would be a continual danger that the system might break down.

As a matter of fact, there have been times when the gold standard operated in a manner not far different from this description of an imaginary cotton standard. Countries have, from time to time, been forced off the gold standard. Since, in any event, the supply as well as the value of gold can be expected to fluctuate, we may raise the question: Why have any standard at all? Why not regulate the supply of money directly instead of stabilizing the value of the money unit through a standard which in turn can only be maintained by a complicated system of buying and selling a standard metal? The answer is mostly historical; it is more "happenstance" than logic. Basically, it is because during the history of the development of money people became accustomed to being able to redeem money for some valuable standard, and especially because the money usually depreciated considerably during periods when they could not do so. These periods usually were ones in which the government issued great quantities of credit money, the redemption of which not only drove them from the gold standard but in extreme cases made the money worthless.

Standard and Credit Money

Never in modern times has the gold standard operated as the *sole* source of money. Actually, a gold standard and various types of credit money have always operated together. The gold standard therefore has been a sort of guarantee of the value of credit money, and under certain circumstances an inadequate one. Let us revert to the island society to illustrate this possibility. Suppose that after the original metallic standard, which we will now call the gold standard,

has operated for some time, the government issues some credit money, as in Chapter I. Up to this time all the government money has been either actual gold coins or gold certificates, and the supply of money has actually been controlled by the relative attraction of selling gold to the treasury for the mint price of a dollar an ounce or selling it elsewhere. Suppose there had been a supply of \$1,000 outstanding, half coins, half certificates. These new notes, let us assume, also total \$500, so that the supply of money (exclusive of bank deposits and bank notes) rises to \$1,500. If people who work for the government and sell things to the government accept these notes as money and if the notes continue to circulate, the only results are a fall in the government's gold reserve from 100% (which the certificates had) to 50% (\$500 in gold reserves for \$1,000 in outstanding certificates and notes) and a probable rise in the price level. If prices rise, each dollar will buy fewer goods. The value of the dollar now is not determined solely by the supply of gold in relation to the supply of goods, but by the supply of all sorts of dollars.

The gold standard will tend to have a "corrective" influence in this situation. With higher prices, the cost of mining gold will be higher, and less will be mined at a dollar an ounce. To this extent the increase in the supply of money will slow down. However, there may be further issues of government money and an increase in bank loans and bank deposits. As parts of the original \$500 issue are deposited in the island bank, the bank's reserves will be increased. As we saw in Chapter II, the bank can now lend more funds and thereby increase further the supply of money. With generally rising prices and an increased monetary demand for nearly everything, there will probably be increased demands for gold for use in the arts and industry. But the production of gold is held back by the fixed price. Gold is therefore obtained from the Treasury or by melting coins, and the government's gold reserve is lowered further. If the people who have heard of monetary inflations begin to fear one under these circumstances, they probably will decide to exchange their money for gold while it is still possible. Such action would still further deplete the gold reserve. Of course, to the extent that the government does redeem notes or accept bank deposits for gold, the supply of money is reduced and that much pressure taken off prices.¹ On the other hand,

¹ Unless the gold is spent as money by the new holders.

the government may pay out the redeemed paper money again as expenses. It may ultimately have to stop paying out gold in which case this brake on the rise of prices ceases to operate.

We may conclude, therefore, that the gold standard operates if the government helps to maintain it, but that it may break down if a great deal of credit money is issued. The supply of money must be carefully watched. Since this is true even with the gold standard, many people have concluded that better results might be obtained if the government frankly managed the supply of money without regard to the state of gold reserves, or in fact, without any regard to gold or other standard money at all. The trend of monetary history since World War I has been in this direction. Governments have gradually exerted more and more control over their monetary systems and several countries have abandoned any attempt to redeem their currencies for any specific amount of gold.

The Gold Standard

International Standard

The gold standard has often been called an international standard. Since different countries have different monetary systems, transactions between nationals of different countries involve the exchange of one type of money for another. Generally speaking, when one makes a purchase in a foreign country he needs foreign money. Foreign money may be bought and sold much as different medieval coins were changed by the money-changers, except that today the type of money used is generally bank deposits. If both countries whose nationals are transacting business are on the gold standard, there is a common denominator for their respective units of money. Just as the price of gold is fixed in terms of dollars if there is a gold standard, so the price of other gold currencies is also fixed. If the price of gold in the United States were \$35 an ounce (the present price) and in Chile 875 pesos an ounce, then the peso would be worth four American cents. The peso would be worth one twenty-fifth as much as a dollar because it takes twenty-five times as many pesos to buy an ounce of gold. This ratio is known as the "par" of exchange when the gold standard is in operation. Actual rates may vary slightly owing to the cost of shipping gold.

The par of exchange is maintained by the same principles that maintain the price of gold within a country. No one needing foreign money would pay much more than par because he could purchase gold within his country at the fixed price and send it to the other country where he would convert it into foreign money by selling it at the fixed price there. Similarly, no one would take much less than par for foreign money because he could reverse the process, buying gold with the foreign money and selling it for domestic money. One of the principal arguments in favor of the gold standard in the past has been this stability of exchange rates which was considered a stimulant to international trade and lending. Presumably traders are more free to make commitments in foreign markets when they are sure what foreign money will cost in the future. Similarly, investors are more confident about lending abroad when they know how much domestic money a given foreign income will provide.

Nonstandard Money

In all monetary systems of recent years the standard money has constituted only a small part of the actual money in use. In the United States in 1930, for example, standard money in the form of gold coins amounted to about \$350,000,000. The total volume of money in circulation was nearly \$30,000,000,000. Coins made of silver, copper, and nickel exceeded gold coins in volume by about \$80,000,000, and government paper money was about double the volume of coins of all kinds. Bank notes in turn exceeded the volume of government credit money, but the largest part of the money supply was the \$24,000,000,000 of bank deposits subject to check.

One reason for the growth of nonstandard money is simply the matter of convenience. A single transaction may consist either of the purchase of a penny stick of candy by a child or of a million dollars' worth of iron ore by a steel mill. It is virtually a physical impossibility to produce coins made out of the standard money material small enough for the most trifling transactions. In fact, the gold dollar was too small for convenience, and was soon discontinued in the United States. On the other hand, there are many more convenient ways of making a million dollar transaction than by transferring that amount of gold or silver. The increasing use of bank deposits as money, which is the outstanding characteristic of modern

monetary systems, is to a large extent the result of the convenience of checks, a fact which helps to explain how such checks have become more and more generally acceptable. The history of money can virtually be explained in the rise of generally acceptable commodities to the status of money and the subsequent rise of credit (debts of various kinds) to such general acceptability that the standard becomes less and less important.

Parity

While a commodity standard such as the gold standard is in operation, the fixed price of the gold or other standard material implies a parity between standard money and all the rest of the money in use. The mere fact that the government stands ready to sell gold at a fixed price means that all the dollars which might be used to purchase gold are maintained at a parity with the gold dollars. While the gold standard is in operation, it is impossible for a paper dollar to have less purchasing power than a gold dollar. If such a situation arose, owners of paper dollars would simply purchase gold at the fixed price or exchange with the government paper dollars for gold dollars.

It is this parity that made the prewar gold standard what it was. Few people who were using the types of money mentioned above as circulating in 1930 knew the differences between the different types of money or gave them any thought. "A dollar was a dollar" as far as they were concerned, and all of the dollars were equally acceptable at stores or as wages or, in fact, for any payments.² When a monetary system fails to function properly, however, distinctions between various types of money become important. When the gold standard was in operation, people were able to obtain standard money which was worth as much as a commodity as it was as money. A piece of gold is a valuable thing; a piece of paper may not be. In view of the fact that paper money is the promise of a government or bank to

² As a matter of fact, it can even happen that gold coins become less acceptable than paper bills. Harry S. Scherman relates that Christopher Morley once tried to buy some goods in a New York shop with a \$10 gold piece, only to have the shopkeeper refuse the coin. The story illustrates how the widespread use of paper money not only overcame the preference for gold but actually made this shopkeeper suspicious of it. He saw so few gold coins that he "forgot" that they were standard money and that other money was promises to pay gold. (*The Promises Men Live By*, New York, Random House, 1938, p. 271.)

pay a dollar, it may be important to know, first, whether the promise is "good" and, second, what is the dollar that will be paid. As we have seen above, it has sometimes happened that the promise could not be kept. During the Civil War, the answer to the second question was that the dollar was 23.22 grains of fine gold, but the government had no gold dollars to pay. Under other circumstances, the definition of the dollar that is promised may change. In 1931, when the British government suspended redemption in gold at the rate of 113 grains to the pound, Bank of England notes became simply promises to pay pounds, whatever they might be. Since a pound note was not then redeemable in anything else, the note itself was the pound. In a somewhat similar fashion, the United States government in 1934 changed the definition of the dollar from 23.22 grains of gold to about 13.7 grains. This new gold dollar would be paid out only under certain circumstances.

Noncirculating Standard

The 1934 arrangement in the United States was an example of what might be termed the modern gold standard. It differs from the "old fashioned" standard described at the beginning of this chapter in that, while the dollar is defined as a fixed weight of gold the price of which is maintained by the government, the citizens do not have the right to purchase gold and redeem their nonstandard money whenever they wish. This type of gold standard was introduced after World War I in response to the relative shortage of gold in several countries that wished to restore the gold standard suspended during the war. They established "gold bullion standards" which provided that the government would sell gold only in large amounts (in bullion form) rather than coin it. In this way, the gold that might otherwise have been in the hands of the public and in bank reserves in the form of coins was concentrated in the governments' reserves where it was available for international transactions. The governments concerned might or might not have further restrictions on the sale of gold in bullion form; in the case of England the gold was for sale and the only restriction was the quantity that had to be taken. In Germany, on the other hand, there were restrictions as to the uses to which the purchaser could put the gold. Under the gold bullion standard the standard money could circulate as representative money; that is,

gold certificates might make up part of the hand-to-hand currency. These certificates merely represented an equivalent amount of gold coins in that they had 100% gold reserves, but they too could be exchanged for gold bullion only in the stipulated amounts.

While the gold standard in the United States prior to 1933 was not a gold bullion standard, gold coins were not an important circulating medium, as noted above, and gold certificates were much more commonly carried. Although gold coins were not widely used, they were freely available and were often used as gifts, prizes, and the like. The main purpose of the gold standard, of course, was not to provide hand-to-hand money but to limit the total volume of money and to provide fixed exchange rates. After the legislation of 1934, neither gold coins nor gold certificates were allowed to circulate. The public had only government and bank currency and bank deposits. As stated previously, however, the government would purchase gold at \$35 an ounce and sell it at the same figure, provided the Secretary of the Treasury approved of the sale. The various reasons for this arrangement will be taken up later, but it may be stated briefly that the main reason was to insure that available gold reserves would be used for international transactions and maintain the exchange rates established by the new gold standard.

Gold Exchange Standard

A fairly recent variant of the gold standard is the gold exchange standard. The gold standard itself exists if a government or central bank maintains a fixed price for gold through any of the mechanisms described above; that is, through free coinage or purchase and sale. A country has a gold exchange standard if, instead of maintaining a fixed price for gold, it is obligated to maintain a fixed price for a foreign currency that is on a gold standard. There is thus an indirect redemption mechanism between the medium of exchange and the standard.

The gold exchange standard established in the Philippines in 1903, for example, provided a hypothetical gold peso worth half as much gold as the American dollar, thus making the peso the equivalent of 50¢. This gold peso was not coined, however, and a silver coin was provided for local circulation. The monetary authorities were required to buy or sell dollars for pesos at the 50¢ rate, with a small

charge. A fund of dollars was maintained in the form of a bank balance in the United States, and a similar fund of pesos was maintained in Manila. When a Filipino had to pay a debt in the United States (such as for imports) he bought a draft on the American fund by giving his check for twice as many pesos. Similarly, when foreigners paid debts in Manila they purchased pesos from the Manila fund by giving their dollars to the American fund. Thus imports would reduce the volume of pesos in the hands of residents of the Islands and exports would provide them with pesos, in very much the same way as if there were a gold standard.

IV

MONETARY STANDARDS IN THE UNITED STATES

ALTHOUGH nearly all transactions in our money system today are settled by the transfer of government or bank debts, this development is of relatively recent origin. In the past a much larger proportion of transactions were settled by transfer of currency of which a large part was metallic coins. The history of the different standards of money value used in the United States illustrates how at times some money was "good" and other kinds of money was not. At times it has been highly important to people to know what kind of money they were to be paid in exchange for their goods, services, or debts.

Colonial

Commodities

The various kinds of commodities used as money in the early American colonies have been described briefly in Chapter I. Precious metals were scarce in the colonies. Few settlers brought money with them since, as a rule, they were poor before they left England and because there were more important things to buy there to bring with them. Similarly, gold and silver coins that were brought into the

colonies through trade tended to be exported to pay for much-needed imports. Under the circumstances, coins as then known abroad were an unnecessary luxury in the colonies. Other things could more economically be used as measures of value and media of exchange, and tobacco, corn, bullets, and similar acceptable commodities were so utilized. These commodities should not be considered standard money, however, as they were commonly assigned monetary values in terms of English pounds, which were thus the standard.

The complexities of doing business with this early money and money substitutes is well illustrated in the journal of an English lady who traveled from Boston to New York in 1704:

They (the people) give the title of merchant to every trader who rates their goods according to the time and specie (kind) they pay in, viz: pay, money, pay as money, and trusting. (That is, they have a *pay* price, a *money* price, a *pay as money* price and a *trusting* price.) *Pay* is grain, pork, beef, etc., at the prices set by the General Court that year. *Money* is pieces of eight, reals, or Boston or Bay shillings, (as they call them) or good hard money, as sometimes silver coin is termed by them; also wampum, (viz: Indian beads) which serves for change. *Pay as money*, is provisions as aforesaid, one-third cheaper than as the Assembly in General Court sets it; and *trust*, as they and the merchant agree for time. Now when the buyer comes to ask for a commodity, sometimes before the merchant answers that he has it, he says, "Is your pay ready?" Perhaps the chap replies yes. "What do you pay in?" says the merchant. The buyer having answered, the price is set; as suppose he wants a sixpenny knife; in pay, it is twelve pence; in pay as money, eight pence, and in hard money, its own price (value), six pence.¹

Specie

The scarcity of metallic money in the seventeenth century arose from the fact that population and trade were growing faster than the volume of currency. According to estimates,² the colonies as a whole exported more than they imported, with a net flow of gold and silver into the colonies as a result. Relatively, however, coins were very scarce, and this led to use of substitutes such as the commodities mentioned above. The colonists also attempted to increase the volume of currency through establishment of private and public mints. In 1652 Massachusetts set up the first colonial mint and produced

¹ Quoted in W. J. Shultz and M. R. Caine, *Financial Development of the United States*, New York, Prentice-Hall, 1937, p. 11.

² *Ibid.*, Chapters I, II.

the famous Pine Tree shillings. These were made considerably lighter than the English shilling in order to prevent their export. They were at first merely slips of silver, but later they were produced as round coins with rings around the edges to prevent clipping.

While the colonies as a whole had a "favorable" balance of trade, the New England colonies normally purchased more from England than they sold there with the result that specie tended to drain out. During the eighteenth century English money, which had mostly disappeared, was replaced largely by Spanish coins that were brought in to the other colonies in trade. The Spanish milled dollar also began to replace the piece of eight, which had circulated widely in the seventeenth century.

Not only did each colony rely on various foreign moneys, but the ratios at which these foreign moneys circulated varied in each colony. That is, the colonists had originally been familiar with the Eng-



FIG. 2.—The Joachimsthaler and the Spanish Milled Dollar. (Courtesy of the Chase National Bank. From the Chase National Bank Collection of Moneys of the World.)

lish system of pounds and shillings and merchants customarily posted prices in these terms. The actual money in circulation, however, was Portuguese, Spanish, French, and Dutch as well as English. The merchant and his customer were obliged to arrive at a ratio of, say, Spanish coins to English pounds before they could do business. The colonial legislatures passed laws setting up official ratios, but as the ratios were different in different states, these laws only added to the confusion. The higher in value was other foreign money in relation to the pound in a certain state, the more advantageous it was to spend it in that state, so, to counteract the scarcity of money, the states competed for money by setting high ratios. At one time the Spanish piece-of-eight was rated at 5 shillings in Georgia, while in Virginia

and New England it was rated at 6 shillings; in North Carolina and New York, at 8 shillings; in South Carolina, 32.5 shillings; and in other colonies, 7.5 shillings.

Paper

In 1690 the Massachusetts treasury, being unable to pay the soldiers sent against the French in King William's War, decided to pay them in "bills of credit." These bills, payable one year later, were issued to the extent of £7,000. Later issues followed, and, since there was no certainty that the bills would be honored when due, they were accepted in trade only at a heavy discount. To remedy this, the General Court of the colony decreed that the bills be acceptable for taxes at a 5% premium, and for several years they did circulate as money with this support. When the bills were received as taxes they were again paid out.

During the eighteenth century, however, the colonies greatly overdid the issue of paper money. The £7,000 issued by Massachusetts in 1690 soon grew to £40,000 and to about £150,000 by 1712.³ The amount was so large that the tax privilege was inadequate to maintain the parity between these bills and specie. Depreciation began and was particularly heavy for the later issues, which had secondary claims on the treasury for redemption. The depreciation was officially recognized by 1727 when rates were established to govern the relative values of the different issues. The early issues were rated at an ounce of silver for eight shillings; the latest at an ounce of silver for 17 shillings. Nevertheless, the colony persisted in paying its bills with newly issued paper and by the middle of the century had outstanding nearly £2,500,000, which depreciated rapidly in terms of metallic money. By this time, it took 60 shillings of the paper money to buy an ounce of silver, a depreciation of 90%. The other colonies did not issue such paper as recklessly as Massachusetts but did have similar experiences on a smaller scale.

Among colonial businessmen, many transactions were settled by exchange of bills drawn on London. The southern colonists, who exported tobacco and other staples to England, could draw bills against the English importers. These bills might be sent to London where agents of the colonists would collect the funds and deposit them to

³ *Ibid.*, p. 28.

the accounts of the exporters, who could later spend them for English goods. Often, however, the southern colonist would sell his bills to a New England colonist who had to pay debts in London. The New Englander could then send the bill to his creditor, who would collect pounds from the importer on whom it was drawn. Sometimes the bills might pass through several hands, one colonist paying a debt to another by the transfer of such a bill.

The Revolution

Paper Money

During the Revolution, the Continental Congress issued what were for those days large quantities of credit money in order to meet the expenses of the war, and these notes eventually depreciated until they were worthless. The Congress had no power to levy taxes, and had little alternative to these issues if it were to have funds. Some representatives saw no use in levying taxes when money was so easy to print, even if Congress had had the power to do so. More and more issues became necessary as prices rose. By 1779 the Continental currency was worth only three cents compared to specie, and the common expression, "not worth a Continental" comes from this episode in history. Prices charged, when Continental currency was offered in exchange, rose to very high levels, since there was a great quantity of the notes and not much hope that they would ever be redeemed for specie. In those days there was no Office of Price Administration, so prices went wherever market forces pushed them. As a matter of fact, price conventions were held for the purpose of determining fair prices and ordering the sale of certain staples to invalids, but they were powerless to prevent the inflation. Commodity money (gold and silver coins), since it actually embodied a valuable material, was generally hoarded and became very scarce.⁴

⁴ The letters of Abigail Adams to her husband, John Adams, contain many references to the inflation of the period. On June 15, 1775 she wrote ". . . purchase me a bundle of pins and put them in your trunk for me. The cry for pins is so great that what I used to buy for seven shillings and sixpence are now twenty shillings, and not to be had for that."

On April 20, 1777 she wrote: "Indian corn at five shillings; rye, eleven and twelve shillings, but scarcely any to be had at that price; beef, eightpence; veal, sixpence and eightpence; butter, one and sixpence . . . New England rum, eight shillings per gallon; coffee, two and sixpence; chocolate, three shillings.

"What can be done? Will gold and silver remedy this evil?"

Not only did the Continental Congress issue so much credit money that it became virtually worthless, but as soon as the states had declared their independence they, too, enjoyed the privilege of printing money. This currency also depreciated for the same reasons, but to varying degrees in different states. When such money was declared legal tender in payment of debts, the depreciation was grossly unfair to creditors, and debtors were described as "pursuing their creditors and paying them off without mercy."

Standard Money

Under these circumstances, little progress was, or could be, made towards setting up a new standard money. The Pennsylvania dollar was adopted tentatively as the standard by the Continental Congress, although it was merely a hypothetical unit which was defined in terms of English currency. The Pennsylvania dollar was legally equivalent to 90 pence. By comparison of the English shilling and the Spanish milled dollar in common circulation prior to the inflation, there was thus established a legal price for gold of $21\frac{1}{4}$ Pennsylvania dollars and, for silver, 1.39 Pennsylvania dollars. The other states, however, did not choose to adopt the Pennsylvania dollar as their unit, and some continued to keep accounts in English money and others in new units of their own.

Under the Articles of Confederation, Congress could regulate

On June 8, 1779 she wrote a long letter describing the difficulties of providing for the family, from which the following is taken: "I have been able to supply my own family, sparingly, but at a price that would astound you. Corn is sold at four dollars, hard money, per bushel, which is equal to eighty at the rate of exchange.

"Labor is at eight dollars per day, and in three weeks it will be at twelve, it is probable, or it will be more stable than anything else. Goods of all kinds are at such a price that I hardly dare mention it. Linens are sold at twenty dollars per yard; the most ordinary calicoes at thirty and forty; broadcloths at forty pounds per yard; West India goods full as high; molasses at twenty dollars per gallon; sugar, four dollars per pound; . . . and our own produce in proportion; butcher's meat at six and eight shillings per pound; board at fifty and sixty dollars per week . . . I have come to this determination,—to sell no more bills, unless I can procure hard money for them, although I shall be obliged to allow a discount. If I sell for paper, I throw away more than half, so rapid is the depreciation; nor do I know that it will be received (at all) long . . .

"I cannot say that I think our affairs go very well here. Our currency seems to be the source of all our evils. We cannot fill up our Continental army (because of) it. No bounty will prevail upon them. What can be done with it? It will sink (disappear) in less than a year. The advantage the enemy daily gains over us is owing to this." (Quoted in Charles Dudley Warner, ed., *A Library of the World's Best Literature*, New York, The International Society, 1897.)

the "alloy and value" of coin struck by the Confederation or by the respective states; it did not have authority to establish a uniform coinage for the country. It did establish a new American unit, the dollar, consisting of $375\frac{6}{100}$ grains of silver or $\frac{1}{15}$ th as much gold.⁵ This dollar was never actually used, however, and the states did not adopt it.

Some of the best minds of the early government worked on the problem of setting up: (1) a new money system and (2) a new standard. Thomas Jefferson created a plan using the decimal system. He pointed out that it is much easier to calculate in tens than by any other set of numbers, and that a system made up of a unit divided into tenths would provide not only an easy one to figure, but a wide variety of combinations. The unit he recommended was to correspond with the Spanish pieces in circulation. He recommended sub-units consisting of $\frac{1}{100}$ th, $\frac{1}{20}$ th, $\frac{1}{10}$ th, $\frac{1}{4}$ th, and $\frac{1}{2}$ of a unit, as we have today, and in addition a half-cent piece. There were also to be an "eagle," worth ten dollars, and half and quarter eagles. This combination makes it easy to provide the right number of coins for any odd price. Thirty-nine cents, for example, may be three dimes, a nickel and four pennies, or a quarter and a dime and four pennies, or other easy combinations; or forty cents may be paid and only one cent be required in change.

The Mint Act of 1792

Bimetallism

The main problem, however, was to arrive at the unit itself. Probably further to divorce the country from England, Alexander Hamilton, in a famous report to Congress, recommended that the monetary unit be called the *dollar*. The most common coin in circulation was the Spanish dollar, and by testing a great many of these coins most of which were worn or mutilated, he decided that a coin which would most closely approximate the prices then prevailing for goods and services would be one consisting of $371\frac{1}{4}$ grains of silver. After

⁵ The word *dollar* comes from "Thaler," a name applied to several central European coins. A village in what is now Czechoslovakia, named Jachymov, had early silver mines and in the thirteenth century it had a mint whose coins got the name *Thaler* from the German name for the town,—Joachimsthal. A Bavarian *Thaler* circulated in the colonies.

considerable study, he further recommended that there be a gold dollar. Naturally the two kinds of dollars should be of equal value, so by further testing of coins and comparing of market values, he decided that gold was 15 times as valuable as silver. The gold dollar should therefore contain $\frac{1}{15}$ th the weight of the silver dollar, or $24\frac{3}{4}$ grains of gold. By tapping both metals, Hamilton hoped to have a more plentiful supply of money and, by a process of averaging, to have a more stable value for each. This dual system is called bimetallism and was adopted by Congress in the Mint Act of 1792.

In line with our abstract description in Chapter III, it will be noted that these respective weights of the gold and silver dollars automatically set mint prices for gold and silver at which the Treasury would buy or sell the metals. If there are 371.25 grains of silver in a dollar, the price of silver must be \$1.29 per ounce of 480 grains. Similarly, the price of gold per ounce when there are 24.75 grains to the dollar must be \$19.35, which is, of course, 15 times as much as the price of silver. In the early days, however, it was expected that owners of gold and silver would simply have the metal coined by the mint. Most of the metal would already be in the form of foreign coins.

Overvalued Silver

As it happened, Hamilton apparently miscalculated the relative values of gold and silver, which were actually about 15.3 to 1. The government, therefore, was overvaluing silver at the mint, in comparison to the market ratio, by accepting it at one-fifteenth the value of gold. In the metal markets of the world, and as the metals were accepted at foreign mints, silver was not this valuable in comparison to gold. A person owning silver would therefore find it more profitable to sell it to the United States government than elsewhere. The price of \$1.29 was relatively high. Conversely, a person owning gold could sell it in the metal market and buy silver, or he could export the gold and import silver, and, at the prices prevailing, for each ounce of gold he sold he could buy 15.3 ounces of silver. He could then sell the silver to the mint, and the three-tenths of an ounce would represent his gross profit on the trade, from which he would deduct the costs of shipping and insurance. However, a trader sending a ship to London anyway would find this a profitable sideline.

The first result of the bimetallic system was thus an actual silver standard because silver was coined as standard money but gold, generally speaking, was not. Silver was the standard money because the dollar, which was the unit of account and legal payment for debts, was a silver dollar. To say that an article was worth a dollar was the equivalent of saying that it was worth $371\frac{1}{4}$ grains of silver.

Gresham's Law

This process by which the overvalued money "drives out" the undervalued is called "Gresham's Law." Gresham, who was an adviser to Queen Elizabeth, explained to her why mutilated and worn coins tended to stay in circulation while new, full-weight coins were kept rather than spent. The law is commonly phrased as "Bad money drives out good," meaning that people tend to spend the worst coins or other money and keep the better ones. Gresham was considering the problem of debased coins which contained less metal than they had originally. Where there were coins in circulation with the same face value but different metallic values, users of the metal would naturally melt the heavier coins and pass on the lighter since they both had the same value as money. Similarly, the heavier coins would be exported because the foreign country would value the coins by weight as so much gold or silver. The heavy coin would thus buy more abroad than the light although it would not at home. This was a different problem from that of bimetallism, although Gresham's Law applies equally to the latter. In foreign trade the gold dollar was worth more than the silver dollar, and since the trader was giving up a dollar in either case, he would export gold dollars rather than silver.

The following quotations from the article already cited describing a prisoner-of-war camp illustrate lucidly the operations of Gresham's Law.⁶ "Certain brands were more popular than others as smokes, but for currency purposes a cigarette was a cigarette." Gresham's Law is often explained by saying that certain types of money are more valuable as commodities than are other types, but for currency purposes a dollar is a dollar. "Consequently buyers used the poorer qualities and the Shop rarely saw the more popular brands; cigarettes such as Churchman's No. 1 were rarely used for

⁶ Radford, *op. cit.*, pp. 194-195.

trading." Presumably, when they were so used, a clerk would "buy" them by exchanging poorer cigarettes for them in the "cash box."

At one time cigarettes hand-rolled from pipe tobacco began to circulate. Pipe tobacco was issued in lieu of cigarettes by the Red Cross at a rate of 25 cigarettes to the ounce and this rate was standard in exchanges, but an ounce would produce 30 home-made cigarettes. Naturally, people with machine-made cigarettes broke them down and re-rolled the tobacco, and the real cigarette virtually disappeared from the market.

This description is strikingly similar to the situation prevailing under bimetallism. The use of the phrase "standard in exchanges" is revealing. Just as a cigarette could be spent as a cigarette, a gold coin could be spent as so many dollars when the 15-1 ratio prevailed, and just as a cigarette could be converted into 1.2 cigarettes by hand-rolling (that is, 25 could be made into 30), a gold dollar could be sold for a fraction more than a dollar as metal. The camp was in a sense maintaining a mint ratio of 25 to 1, while the market ratio was 30 to 1.

Machine-made cigarettes were always universally acceptable, both for what they would buy and for themselves. It was this intrinsic value which gave rise to their principal disadvantage as currency, a disadvantage which exists, but to a far smaller extent, in the case of metallic currency;—that is, a strong demand for non-monetary purposes.

Compensatory Action

The operation of Gresham's Law involves another principle which is the basis of most of the theoretical support of the bimetallic system. This is the principle of "compensatory action" referred to a few paragraphs above as the averaging out process which Alexander Hamilton relied upon. According to this principle, in such circumstances as prevailed under the 15-1 ratio, the coinage of silver is supposed to reduce the amount of silver available in the industrial markets, while the noncoinage of gold tends to increase the industrial supply of gold. Further, the relatively high market price for gold tends to stimulate its production while the relatively low market price for silver tends to restrict its production, with a resulting trend towards a rise in the value of silver and a fall in the value of gold; the market ratio tends to fall in line with the mint ratio. Con-

sidered in this light, the bimetallic system would be a shifting system; whatever metal happened to be overvalued at the time would be the actual standard, and forces would be set up which likely would bring the undervalued metal back to monetary use. It can further be argued that this is a stabilizing tendency because the fluctuations in the value of a single metal probably would be canceled by use of the other metal as the standard.

To illustrate: if, while both metals were being used, gold should become more valuable, it would no longer be coined and the country would slip automatically to a silver standard. Later, if silver should become more valuable, the country would automatically shift to the gold standard, as silver no longer would be coined. That these tendencies exist is apparent, but it is also true that they did not prevail during the American experiment with bimetallism. Two reasons are sufficient to explain the failure of the compensatory principle. One is the fact that other mints maintained ratios different from the American ratio, and the volume of transactions at the American mint was nowhere nearly sufficient to force the world ratio to the mint ratio in this country. The other is that the supply of gold or silver does not react quickly to slight changes in price. When a deposit is discovered it is likely to be mined if profitable, and discoveries do not follow price changes. In addition, the precious metals are often found in conjunction with other metals and are produced as by-products or joint products. If silver and lead are produced from the same mine, the price of silver may have less effect on the output than the price of lead.

Difficulties, 1792-1834: Lack of Gold

Since gold was not coined, or if it were coined it was only for the convenience of those who wished to export the coins, this *de facto* silver standard failed to provide the country with any coin larger than a dollar. In fact, an unusual circumstance made even the silver dollars disappear. It happened that in the West Indies many old and dull Spanish dollars still circulated and that many of these weighed a few grains more than the 371.25 in the American dollar. Traders could take along quantities of the new, shiny, American dollars and trade them to the natives for the duller but heavier Spanish dollars.

On their return they could have the Spanish dollars reminted and the extra weight would be profit; then the trip could be repeated. In this way many of the new dollars disappeared as fast as they were minted, so that the 50-cent piece was actually the largest piece of standard money available for business transactions. This was particularly inconvenient for banks, which had to keep their reserves literally in barrels. As a result of these difficulties, the American system actually did not have a very wide use for many years, and the "demonetization" of foreign money had to be delayed several times.

16-1 Ratio, 1834

The discovery of gold in Georgia gave sufficient political impetus to this economic problem to cause the monetary law to be amended. The new law of 1834 changed the ratio by raising the price of gold.⁷ It was obvious that a rise in the mint ratio was necessary to equate the values of the gold and silver dollars and to bring gold to the mint. The change in the ratio might be accomplished by raising the price of gold or lowering the price of silver (changing the respective metallic contents in the opposite direction), or a combination of both. Actually, Congress raised the price of gold not just enough to make the mint ratio equal to the market ratio of the two prices, but to 16 times the price of silver. The gold content was thus reduced from 24.75 grains to 23.2 grains. This was the weight of pure gold in the dollar, and the "fine" weight of silver in the dollar was left at 371.25. Two years later a refinement was made in that all the various coins were made $\frac{9}{10}$ ths fine instead of $1\frac{1}{2}$ ths as in the past, which involved a slight change in the pure gold content, to 23.22 grains. In both cases, however, the ratio was so close to 16-1 that that is how the ratio is commonly described. The mint price of gold then, being approximately 16 times that of silver, was \$20.67 per ounce. This price lasted until the monetary legislation of 1933, approximately 100 years. The silver content of the dollar is still 371.25 grains, but silver no longer has free coinage.

⁷ The first gold of consequence discovered in the United States was a seven-pound nugget found in North Carolina in 1789. From 1790 to 1840 most of the American gold was mined in that state. Following the change in the mint price, a private mint was established in 1834 in the southern part of the state by arrangement with the government. This private mint produced \$3,000,000 of \$1.00, \$2.50 and \$5.00 coins. In 1837 the United States Mint established a branch at Charlotte, N.C., which operated until 1862.

Disappearance of Silver

In spite of this legislation, the market ratio tended to be about 15.5 to 1, and now gold became the overvalued metal. European nations, which exerted more influence on the metal markets than did the United States Mint, had monetary systems reflecting the 15.5 to 1 ratio, either by separate gold or silver standards or by bimetallic systems at or near that ratio. The results were, of course, the reverse of the 15-1 mint ratio. Gold being overvalued, it tended to flow to the mint whereas silver did not. It even paid to melt silver coins so that the silver could be exported and traded for gold. The result was a shortage of small coins, although probably the main cause of the shortage was the lack of new coins to fill the need as the trade of the country grew. Many devices were tried to fill this need. Stores gave customers receipts for their change so that later they could spend the receipts. Bank notes were torn into fractions to represent parts of a dollar. Extra issues of postage stamps were put out to be used as change.

Subsidiary Coinage, 1853

After some years of this inconvenience, it was realized that small coins need not be standard money, but might be made of any convenient material. Although new legislation did not go far in this direction, a coinage law of 1853 provided that the silver content of fractional coins would be approximately seven per cent less than their face value or "full" content. In other words, instead of any combination of fractional coins which makes up a dollar now weighing 371.25 grains like the dollar itself, they would weigh about seven per cent less than that. That would mean a profit of that much in the coinage of subsidiary money. Hence the privilege of free coinage was removed from them, and at the same time their legal tender power was limited to five dollars.⁸ Hereafter the government would coin them as they were needed and only incidentally make the profit involved.⁹ This profit in coining nonstandard money is known as

⁸ Legal tender is money that is recognized by law as satisfactory payment; the creditor may not prevent payment by refusing to accept legal tender. A debtor may deposit it in trust for the creditor and thus discharge his debt. Small change usually is limited legal tender, limited to a small amount, as \$5.00.

⁹ A description of the factors determining the need for subsidiary coins and how it is met appears in Chapter XV.

seigniorage. The privilege of free coinage must be removed from such money or there would be a flood of it as owners of metal took advantage of the profit. A step towards this action was a law of 1851 which introduced a special three-cent piece to be made of three parts silver and one part copper. This coin was introduced primarily to assist the Post Office in selling three-cent stamps, however, and was not considered, basically, a monetary measure.

It may be noted that the Subsidiary Coinage Law of 1853 was a partial demonetization of silver. Free coinage no longer applied to silver except for the dollar itself. As the price of silver was such that it was not offered to the Treasury at the mint price of \$1.29 an ounce, the free coinage privilege was not exercised, and to all intents and purposes the United States was on the gold standard from 1832 to 1862.

Paper Standard, 1862-1879

From 1862 to 1879 a paper standard prevailed, not because the government consciously adopted one, but because of the inflation during and after the Civil War. Although many argued that the citizens of the Union states would willingly pay whatever taxes were necessary for the prosecution of the war, Congress decided to raise money to a large extent by issuance of nonredeemable notes, commonly called "greenbacks." If a government borrows by the sale of bonds, it receives money in exchange, and unless the money is created for the purpose by the banks, there is no increase in the supply of money. However, when the government borrows by issuing noninterest-bearing circulating notes, which presumably will be repaid at a later date, these notes are actually money, and the supply of it is accordingly increased. One reason why Congress decided to finance the war in this way was that there was a strong assumption that the war would not last long. Many thought that not much money would be needed and that alterations of the tax system would be unnecessary and also too slow. As the war dragged on Congress adopted many new taxes, including the first Federal income tax, but it also authorized a total of \$450,000,000 of greenbacks, which were officially called United States Notes.

This large volume of money—large for those days—which placed more money in the hands of people to spend tended to increase prices.

As people discovered that they had to pay higher prices when tendering greenbacks than when tendering gold, they would normally have redeemed the paper, but that was not possible during the war. Hence, there were two price levels, one for gold money and one for greenbacks. Actually, gold was more commonly hoarded and not spent at all, so that prices and wages were expressed in greenback dollars. In view of the fact that the greenbacks might eventually be redeemable in full for gold, people would be careful that they did not let them go too cheaply. Whenever the Union forces were successful in the field, the value of greenbacks would tend to rise because of improved prospects for a Union victory and eventual redemption of the currency. The discount on greenbacks could be measured most directly by the price of gold in the bullion markets, where the price eventually reached about three times the mint price. The general price level also rose to about three times its prewar height forcing the greenbacks eventually to circulate at about one-third of their original value. The greenbacks were called "thirty-cent dollars" since they bought only about what thirty cents bought before the war.

Resumption Act of 1875

When the war was over, the government obviously could not immediately resume specie payments (redemption of paper in gold at the mint price) because the greenbacks were so depreciated that people would immediately have drained the Treasury of gold. However, it was understood that resumption of specie payments would come eventually. Since the government also began a program of retiring the notes, they began to appreciate. The government could retire them most simply by accepting them for taxes and refraining from paying them out. As a result of these measures, the price level fell almost as rapidly as it had risen during the war, and caused economic distress to many people. In the meantime, the government was accumulating a stock of gold; therefore, an Act of 1875 provided that redemption was to be resumed on January 1, 1879. It was further determined by Congress that \$300,000,000 of the greenbacks should not be retired from circulation, although after 1879 they were redeemable. When they were redeemed the government paid them out again.

Further Silver Legislation

The "Crime of '73"

Overlapping the greenback period there were several developments of importance to the type of standard used by the United States. Outstanding among these events was the so-called "Crime of '73." In 1873 a general revision of coinage laws took place, and, as there had been no coinage of the silver dollar for some time owing to the high market price of silver bullion, this coin was removed from the list of coins to be made by the mint. As such, this action was of minor importance to everyone. However, shortly thereafter greatly increased discoveries of silver in the West made this metal much more plentiful and cheap. At the same time certain European countries, such as Germany, abandoned the free coinage of silver in favor of the gold standard, thus greatly reducing the demand for silver. Therefore, the price of silver began to fall, and the producers could no longer simply feed it to governments at fixed prices. As a result, there was great political agitation from silver-producing states to restore the free coinage of silver, and the Act of 1873 became known in political debate as the "Crime of '73." Widespread distress accompanying the falling postwar price level led many citizens to support the demands of the silver states. Debtors found it harder and harder to raise the money to pay their debts on the falling price level, and farmers in particular wanted easier money and rising prices. Eastern capitalists, on the other hand, favored the gold standard and its lower price level, more stable than the price level they feared would result from a "silver inflation." The Act of 1873, of course, merely recognized the *de facto* situation with regard to silver prices and created, in a negative way, a legal gold standard instead of the bimetallic standard. As it happened, the Act was passed while the greenback standard prevailed, so it was not until the resumption of specie payments that the gold standard was actually established.

Bland-Allison Act

The agitation for remonetization of silver led to two Congressional compromises. In 1878 came the Bland-Allison Act, which di-

rected the Treasury to purchase, at the market price, from two to four million dollars' worth of silver each month. The silver was to be coined into regular silver dollars of 371.25 grains of pure silver each. This law was in some respects an extension of the Subsidiary Coinage Act, in that free coinage at a price of \$1.29 was not restored but rather the Treasury had to buy the silver and produce the dollars whether they were needed or not in trade. As a matter of fact, heavy silver dollars were not popular as pocket money, so the Treasury stored them and issued silver certificates in their place.

Sherman Silver Purchase Act

The Treasury usually stayed close to the \$2,000,000 minimum monthly expenditure and the silver interests and others favoring inflationary measures were not satisfied with this Act. In 1890 they succeeded in obtaining passage of the Sherman Silver Purchase Act. This Act differed from the former in that the Treasury was to buy 4,500,000 ounces of silver per month at the statutory price of \$1.29 per ounce, or whatever fraction of this amount of silver might be offered for sale to the Treasury. The silver was to be paid for with Treasury notes, which in turn were to be redeemable in either gold or silver at the option of the Secretary of the Treasury. The notes were made full legal tender, except where private contracts provided otherwise, and as much of the silver was to be coined as might be necessary for redemption.

The result of this Act was a significant increase in the supply of money redeemable in gold. In order to maintain the gold standard, the Secretary of the Treasury permitted the redemption of the notes in gold. To refuse would have been equivalent to dropping the gold standard. Redemptions of paper money became so heavy that by 1893 it was feared the United States would have to give up the gold standard. The Treasury was not rich enough to redeem the notes and retire them, but paid them out again to meet government expenses. Furthermore, there was a new issue every month. As the gold reserve of the government went down, the fear that gold redemption would be stopped served to increase redemptions while they were still possible. The government arranged to sell bonds for gold, but the "endless chain" of redemptions, paying out notes and more redemptions, could not be stopped. President Cleveland eventually called

a special session of Congress, pointed out the disruptive effects of the silver purchases on banking, trade, and government finance, and succeeded in having the Sherman Silver Purchase Act repealed.

Gold Standard Act of 1900

This action brought to a head the political conflict between the gold-standard, "sound-money" interests on the one side and the silver-money inflationists on the other. Paradoxically, while Cleveland was a Democrat, the gold standard was generally a Republican issue and restoration of free coinage of silver was a Democratic issue, under the leadership of William Jennings Bryan. The issue was settled in the campaign of 1896 when McKinley defeated Bryan for the presidency. In this campaign Bryan made his famous "Cross of Gold" speech, wherein he accused Eastern capitalist interests of exploiting other classes by deflationary tactics.¹⁰ With the Republicans in power, the Gold Standard Act of 1900 was passed. This Act redefined the dollar as 23.22 grains of fine gold, provided free coinage for gold, and directed the Secretary of the Treasury to maintain all other circulating government money at a parity with gold by redemption.

The price level had begun to turn up again in 1896, and by 1900 the pressure from agrarian and debtor interests had subsided. Increased business activity and prosperity took some of the attention away from monetary matters, and other issues, such as the tariff, shared the political spotlight. The Act of 1900 succeeded in closing the era of controversy over the monetary standard and there were no further substantial changes until the world-wide breakdown of the gold standard during the early 1930's. Since this later chapter of monetary history is much more meaningful if the reader understands some of the international monetary issues involved, it will be postponed until these other principles have been explored.

¹⁰ "We are fighting in defense of our homes, our families, our prosperity . . . We have petitioned, and our petitions have been scorned. We have entreated, and our entreaties have been disregarded. We have begged, and they have mocked when our calamity came. We beg no longer, we entreat no more, we petition no more. We defy them! Having behind us the producing masses of this nation and the world, supported by the commercial interests, the laboring interest, and the toilers everywhere, we will answer their demand for a gold standard by saying to them: 'You shall not press down upon the brow of labor this crown of thorns— You shall not crucify mankind upon a cross of Gold.'" This quotation was the climax of Bryan's famous speech.

V

AN INDIVIDUAL BANK

THE hypothetical bank described in Chapter II was designed to serve as an introduction to a later description of real banks. In the United States today there are several kinds of banks. They may be classified according to the types of business on which they concentrate or by their legal place in the banking system, as well as in other ways. The first classification would show commercial banks, savings banks, trust companies, land banks, building and loan associations, mortgage banks, investment banks, central banks, and others. Institutions similar to banks, like finance companies, commercial paper houses, and factors might also be listed. The second classification would show national banks, all of which are members of the Federal Reserve System, and state member banks, state nonmember banks, and private banks. In a study of the monetary system, the commercial banks, whether national or state, or member or nonmember, are of the first importance because of their direct influence on the supply of money. Other types of banks are important for collateral reasons; they perform important functions and influence business activity, but they are not intimate parts of the monetary system. Most of the description that follows, therefore, deals with the principles underlying the operation of commercial banks.

*Establishing a Bank**Incorporation*

Banks are almost universally corporations and may be chartered by the Federal government or by the respective state governments. The United States has a peculiar commercial banking system in that there are thousands of unit banks scattered across the country. Most foreign systems feature a few large banks with branches. Most of the banking business in England is done by five banks.

Whether a prospective banker chooses to incorporate as a state or Federal instrumentality depends upon his valuation of the different rules that will govern the bank—whether he wants to be a member of the Federal Reserve System, how much capital the respective governments require the bank to have, and similar problems. Leaving aside for the moment what these rules and regulations are in actuality, we will trace the founding of a bank. The most clearly explanatory method of doing this is to examine a bank's balance sheet at various stages in its early history.¹

The first step is to incorporate, which involves satisfying the appropriate state or Federal official that a bank should be organized in the locality and obtaining a charter. The banking corporation must have funds with which to start, so stockholders are induced to purchase shares. Since a new business venture often loses money for a while, the stockholders are usually required to pay a price for their shares which will permit the bank to start with a "paid-in surplus." At the time the corporation is started, with, let us say, the sale of

¹ A balance sheet is a listing of the assets and the liabilities of a business unit. It is sometimes confusing to those who meet it for the first time in that some of the items that appear on the liability side have names that make them sound like assets. The student can best avoid confusion if he thinks of the assets as the property of various kinds that the banking corporation owns. The liabilities are of two types. First, there are the items of debt—amounts owed to others. When these liabilities are subtracted from the total of the assets, the difference is what the owners of the corporation own clear and free. This difference is called the "net worth" of the corporation and is segregated into two essential parts, the capital and the surplus. The capital is the amount of money originally paid in, as the stated price of the common stock. The remainder, if any, is surplus. If it is a minus quantity, it is a deficit. The point to grasp is that the liabilities are not things but amounts of claims on the assets, the claims of creditors and owners. The assets are the values of things. There is no necessary connection between a particular asset and a particular liability. Surplus, for example, does not imply a sum of money, but merely that the asset values add up to more than the claims of creditors and the capital stock.

100 shares of stock for \$120 per share, its first balance sheet will read:

MAINLAND BANK

STATEMENT OF CONDITION ON
JANUARY 1, 1950

<i>Assets</i>		<i>Liabilities</i>	
Cash	\$12,000	Capital	\$10,000
		Surplus	2,000
	<u>\$12,000</u>		<u>\$12,000</u>

The cash, incidentally, is probably in the form of a bank deposit, or deposits, in other banks, since the stockholders have doubtless presented the treasurer of the new bank with checks in payment for their shares. By the laws pertaining to corporations, and the banking laws where they modify them, each share of stock is a proportionate share in the ownership of the business. In this case, the owners have $\frac{1}{100}$ th of the business for each share they own. Each share gives them one vote at stockholders' meetings, where the directors are chosen. The directors, in turn, choose the officers who will be charged with the actual operation of the bank. Similarly, when the directors declare dividends out of profits earned, each share of stock will get its proportionate share of the dividends. If the business eventually fails, the creditors—in the case of banks most of the creditors are the depositors—have first claim on the proceeds of the assets. Whatever is left is used to reimburse the stockholders for their investment. Until changes in the National Banking Law under the New Deal, stockholders were subject to double liability. In case of failure, if the assets did not bring enough to meet the claims of the depositors, the stockholders might be assessed up to the original stated ("par") value of their shares to make up the deficiency.

Operations: Deposits

Before the Mainland Bank can begin to operate, it must purchase or lease a banking house and obtain the necessary equipment—counters, safes, desks, paper forms, and other supplies. The acquisition of these things will require the spending of cash, and the assets will now consist of two items, cash and "banking house and fixtures." Then the bank is ready to open for business; more specifically, it is

ready to accept deposits. To obtain deposits of funds which may be lent or invested profitably is presumably why the bank was started in the first place. The business of banking is the business of lending other people's money, which they deposit with the bank. The profit from banking arises primarily from the difference between the interest paid on deposits (if any is paid at all) and the interest collected on the loans and investments made by the bank.²

Depositors may make either of two kinds of deposits, time or demand. Time deposits are those which the bank need not repay prior to the expiration of a notice period. Interest is usually paid for them. Demand deposits are withdrawable on demand and checks may be written against them. Interest is not paid on demand deposits, although prior to 1933 it customarily was. Let us assume that after a few days of operation the bank has received \$5,000 of each type of deposit. The balance sheet will reflect this and a \$7,000 expenditure on a building and equipment as follows:

<i>Assets</i>		<i>Liabilities</i>	
Cash	\$15,000	Deposits:	
Banking house		Demand	\$5,000
& fixtures	7,000	Time	5,000
		Capital	10,000
		Surplus	2,000
	<u>\$22,000</u>		<u>\$22,000</u>

So far, the bank has been incurring expenses but making no income. The deposits, of course, are not income, as they are matched dollar for dollar by the obligation to repay them to the depositors. However, the bank is in possession of \$15,000 which it may lend, subject to certain restrictions. This \$15,000 may be brought to the bank in several forms. There will be a certain amount of currency, but there will probably be more in the form of checks. The checks may be drawn on banks in the same city or on banks some distance away. The checks are known as "collection items" because they are not cash until they are collected. The bank may collect directly from the other local banks. If the Mainland Bank is a member of the Fed-

² Other reasons why individuals may be interested in starting banks are (1) the prestige of being an officer of the bank, (2) opportunity to direct business through the bank to another firm, such as a law firm or real estate business, (3) assurance of a source of loans for other businesses.

eral Reserve System it will maintain a deposit at the regional Federal reserve bank, and it will probably collect the out-of-town checks by depositing them at the reserve bank. In this process the reserve bank credits the Mainland Bank with the amount of the checks and deducts them from the accounts of the banks on which the checks were drawn. If the Mainland Bank is going to purchase bonds with some of the \$15,000, its reserve bank balance is as good as currency because it can pay for the bonds with a check on that balance. At this stage, it will simplify our analysis of the bank's operations if we lump these various forms of funds into one item and call it cash or "reserves," although to guard against a false impression it should be remembered that a bank's reserves are only to a small extent actual currency stored at the bank.

Investments

Next, we will suppose that the bank purchases \$5,000 worth of government bonds and gives the seller a check for that amount drawn against its balance at the reserve bank. The bank still has \$10,000 of spendable funds left, including the items in process of collection, which will be cash or deposits in some other bank in a day or two. Clearly, the banker will not lend or invest all of this money because the depositors may wish to withdraw some of their funds, and he must therefore have a reserve on hand to meet this possibility.

Reserves

However, as was noticed with the island bank in Chapter II, as the bank settles down to doing a regular business, it will receive deposits every day and there will be withdrawals every day. These will more or less balance; one may be greater one day and the other greater the next. Since this is a new bank, and we may assume that it will grow at least for a while, it will usually take in more deposits at the "receiving teller's window" than it pays out at the "paying teller's window" or to other banks as checks are drawn on it and deposited in them. Most of its deposits will continue to be in the form of checks which its depositors have received in the course of their trades and business dealings and which they wish to deposit to their accounts for future spending. Most of the withdrawals, likewise, will be in the form of collection items presented by other banks where

checks, drawn on the Mainland Bank by its depositors, have been deposited. To a large extent, therefore, the banker relies upon his new deposits to give him the funds with which to meet his withdrawals. When they are inadequate, he falls back upon his reserves.

The banker will want to lend and invest as much as possible of the funds deposited with him so that he can obtain the interest on the loans and investments. Hence, he wants to keep his reserves as small as he considers safe. In what form and in what quantity he will keep them we will consider shortly. At this point, we may assume that he finds that a reserve equal to 10% of his deposits is adequate, in this case \$1,000.

Loans

The purchase of government bonds left the bank with \$10,000 (counting the items to be collected), out of which come the \$1,000 to be held in reserve and \$9,000 more to be put into earning assets. Let us assume that a local businessman requests the bank to lend him \$5,000 which he needs to pay his employees. He shows the bank that he has made sales of goods that will be paid for shortly and has other sources of future income that will permit him to meet his other obligations and repay the bank when the loan is due, say in 60 days. He agrees to pay the bank interest on the loan. Customarily, the bank deducts the amount of the interest from the amount of the loan, and the borrower repays the face amount of the loan. The mathematics of this transaction will be discussed in the chapter on loans and discounts.

Since the borrower wants the funds to pay wages, he may want the loan to be made in currency. Assuming that the bank has this much of its reserves in the form of currency, it agrees to make the loan, and after taking account of the previous investment in government bonds, the bank will now find that its balance sheet reads:

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$5,050	Deposits:	
Loans	5,000	Demand	\$ 5,000
Investments	5,000	Time	5,000
House & fixtures	7,000	Capital	10,000
		Surplus	2,000
		Unearned discount	50
	<u>\$22,050</u>		<u>\$22,050</u>

The fact that the discount was taken immediately is shown in two figures, reserves and unearned discount. The discount charged the borrower is assumed to be \$50, and hence the bank lends him \$4,950. The borrower's note reads for \$5,000, which is the figure put in the assets. This increase in the total assets of \$50 is reflected in an increase in the net worth of the bank and is entered on the liability side as "unearned discount."³ At the end of the 60 days, when the borrower repays \$5,000, this item will become "undivided profits" and the loan item will disappear.

The results will be somewhat different although essentially the same if the borrower desires to take his loan in the form of a bank deposit. This will usually be the case, as most business expenditures are made by check. Even a substantial part of pay rolls are met by check, and the wage-earners may or may not cash their checks immediately, or they may deposit them.

Let us assume now that instead of making the loan in the form of currency the bank lends the same amount, but gives the borrower a checking account. We will then assume that the borrower draws checks in favor of his creditors for the full amount of the loan, and of these checks totaling \$4,950, \$4,000 is deposited in other banks, \$900 is redeposited by the recipients in the Mainland Bank and \$50 is cashed by the recipient of a check for that amount. The *initial* result of the loan on the balance sheet in this case is:

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$10,000	Deposits:	
Loans	5,000	Demand	\$ 9,950
Investments	5,000	Time	5,000
House & fixtures	7,000	Capital	10,000
		Surplus	2,000
		Unearned discount	50
	<u>\$27,000</u>		<u>\$27,000</u>

The initial result seems to be quite different from the result when the loan was made in currency. Deposits are now increased by the amount lent, and of course the loan appears as an asset; the unearned discount shows up as before. Momentarily, the bank has its \$10,000 reserves. However, the secondary results will be such that the bank will be in nearly the same position as before. Checks totaling \$4,000

³ "Not yet earned" or "being earned" might more accurately describe the discount than "unearned."

will be drawn and given to recipients who, we have assumed, will deposit them in other banks. These other banks will now collect the checks from the Mainland Bank, and it will lose reserves by that amount to the other banks. We also assumed that some of the recipients were depositors at the Mainland Bank and that they will deposit checks amounting to \$900. Further, a recipient of a \$50 check will cash it. After these three transactions are completed the balance sheet will read:

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$5,950	Deposits:	
Loans	5,000	Demand	\$ 5,900
Investments	5,000	Time	5,000
House & fixtures	7,000	Capital	10,000
		Surplus	2,000
		Unearned discount	50
	<u>\$22,950</u>		<u>\$22,950</u>

In examining these figures we find that the bank's reserves are reduced by the \$4,000 which it loses to other banks in which checks for that amount were deposited, and by the \$50 paid out to the person who cashed his check for that amount. The other \$900 of checks were deposited in the Mainland Bank rather than in competing banks, so the bank does not lose reserves as a result of these checks. This differs from the preceding example of a loan of currency, but it should be noted that the possibility of redeposits was ignored in that example. If the loan had been made in currency to meet a pay roll, it is entirely possible that a considerable part of the currency would have been redeposited either by some of the wage-earners or by the merchants from whom the wage-earners bought goods.

On the liability side of the balance sheet we find that demand deposits have been reduced by the amount of the checks, \$4,950, but immediately increased by the \$900 redeposited. The eventual results to the bank are thus the same whether the loan was made in currency or by granting a deposit. Actually, the proportion of the loan which returns to the bank may differ, depending upon whether it was made as a deposit or as currency, because of the different people who will probably get the money from the borrower. However, essentially the same type of process prevails. The value of these examples is to illustrate that the bank can make the loan in either form and that

in each case it is limited in making loans and investments to approximately its excess reserves since it will lose reserves in either case.

Nature of Bank Credit

General Acceptability

At this point we may well pause to ask a question that in some ways is so obvious that it tends to be overlooked: Why does the borrower borrow? It might appear that the answer is simply because he wants the money. This does not answer the further question of why he borrows from a bank. Presumably, if a businessman is capable of borrowing from a bank, he might be "extended credit" by his suppliers or his customers. Instead of borrowing in order to buy goods, he might buy on credit and pay later. To some extent the answer lies in specialization and division of labor. Banks specialize in lending; businesses usually prefer not to lend because it involves credit risks and credit analyses that may interfere with their regular duties.

There is a more fundamental reasoning, which leads to a clearer analysis of banks and bank credit. An individual ordinarily would not be able simply to write "I.O.U.'s" with which to purchase commodities. Possibly sellers might be quite willing to "trust" the individual if they know him and have confidence that he will pay later. Actually, this is the meaning of the word *credit*, which stems from the Latin *credo*, "I believe," and is illustrated in the familiar charge accounts of retail stores. However, most businesses might still be reluctant to take the I.O.U. (which is nothing more or less than a promissory note) because they would probably have difficulty in spending it. Their only recourse is to hold it until maturity, when it will be redeemed for real money, or else to borrow the money themselves during the interval. If some widely known and rich individual made a habit of purchasing things for notes which he took up each month, it is conceivable that people who sold him things might be able to turn over the notes to others, because everyone would know of his practice. Of course, this is most unlikely with any individual. The hypothesis, nevertheless, does indicate the difference between individual credit, such as this, and bank credit. The notes of a bank are generally acceptable, in contrast to the "notes" of any individual. For this reason, they may circulate from hand to hand and become

money, although it is most unlikely that the notes of any individual may become money in this way.

The bank thus inserts itself between buyer and seller, when credit is involved, and allows the buyer to substitute the credit of the bank for his own. The price it charges is interest. So we find borrowers "trading" their interest bearing notes to banks for the banks' non-interest bearing, but circulating, notes or deposits subject to check. This manner of thinking of bank credit should be remembered when the reader reaches the chapters on bank loans and investments, for it lies in the background of nearly all banking transactions.

This problem is merely an extension of the discussion of the nature of money as something that is generally acceptable. Individual credit is not likely to become money for the simple reason that the individual is not likely to be well enough known. One person or firm may extend credit to another person or firm, but if there is an evidence of the debt, like a promissory note, the creditor does not expect to be able to spend it. It is true that he might be able to pass on the note in settlement of a debt with a third party, but such a transaction is not typical because it necessitates that the third party is willing to be a creditor of the first borrower. This willingness can be made more likely if the lender endorses the note, but in this case the third party is not merely the creditor of the first borrower. The original lender has not completely discharged his debt to the third party in this case because if the first borrower does not pay he is still liable.

The bank is in the business of taking promissory notes and exchanging money for them. It does not expect to spend the promissory notes (or the bonds or other evidences of debt) for the simple reason that they are not money. We may think of loans virtually as purchases because in fact the bank buys the promissory notes of the borrowers. We recognize that loans are similar in this respect to bonds since we commonly talk about buying bonds, but it is not customary to apply the same language to short-term loans. The language is not exactly applicable because there is a sort of repurchase agreement; the lender buys the promissory note at one price with an agreement that the borrower will buy it back at a higher price, or as we commonly say, will pay back the loan with interest.

We have said that the bank exchanges the noncirculating notes of the borrower for its own circulating notes. As a matter of fact, today

commercial banks cannot issue notes, but the deposits they grant borrowers correspond to the notes that were customarily used in the past. There is this difference, which further illustrates the nature of bank credit. When a bank note is tendered in exchange, the recipient need not concern himself about the person tendering it. Bank notes are so generally acceptable that the recipient accepts them as final discharge of the obligation. The recipient considers himself paid when he has a bank obligation in exchange for the person's obligation. When a debtor offers a check, however, he is again offering a bank obligation, but there is a possibility he has no right to do so. He may not have a deposit; in other words, the bank may owe him nothing to pass on to others. Hence, the element of personal credit enters the problem when checks are used because the recipient must be sufficiently assured that the check is "good"; that is, that the bank will credit him with the amount of the check or give him currency for it. If this assurance is sufficient, however, the creditor will take the check in payment and the transfer of the bank deposit will represent a use of money in the same way that the transfer of a bank note would.

Bank Debts

It follows from what has been said previously that a bank is at once both a debtor and a creditor. The bank is a creditor of the various people and firms who have been extended credit by the bank in the form of loans and of the institutions which issued bonds that are currently owned by the bank. At the same time, the bank owes funds to its depositors and stockholders.

Debts to Stockholders

As has already been pointed out, the capital of the bank is comprised of the funds contributed by the stockholders. The function of the capital is to act as a buffer between the fluctuations in value of the assets on the one hand and the amounts of debts to depositors on the other. As a matter of fact, banking practice diverges from this principle in that often the capital is invested in the bank building, to a greater or lesser extent, so that it is not readily available to meet the needs of depositors if necessary.

Experience over a long period of time would tend to show some

proportion that the capital should bear to deposits. For a long time a rough rule of thumb in this country was that capital funds, including surplus, should approximate 10% of the deposits. Banks normally do not pay out all their annual profits in dividends but carry some of them to surplus. In this way, the capital funds of the banks grow. However, if deposits also grow, the proportionate protection afforded by the capital may not improve; of course, if deposits grow rapidly enough the proportion between capital and deposits will decline. This was true during the inflationary years of World War II, when bank deposits grew very rapidly. Although most banks carried a large part of their earnings to surplus, their capital and surplus diminished as a proportion of deposits. By the end of 1945 many large banks found their deposits twenty times their capital and surplus, giving them a ratio of 5% or less. During these years the banks' resources became predominantly Federal government bonds, and it was argued that in view of the safety of government bonds a capital ratio much smaller than the traditional one was sufficient. A minority of the banks attempted to keep their capital ratios up by selling new shares of stock.

It should be emphasized again that the capital and surplus of a bank (or any corporation, for that matter) are not a fund of money but merely the bookkeeping result of comparing the values of the assets with the liabilities. A large capital and surplus implies a large excess of asset values over and above the amount of deposit liabilities, but it does not necessarily imply anything at all with respect to the form the assets may be in. In other words, the reserves of a bank are one of its assets and they may be as small as the law allows while the bank has a large capital and surplus. The protection of the depositors lies in the grand total of assets, which presumably can be liquidated if necessary to allow the depositors to use their funds.

Debts to Depositors

The fact that a bank deposit is a bank debt should be emphasized. When a depositor makes a deposit of currency or checks, the money thereafter belongs to the bank and not to the depositor. The depositor has acquired instead the right to withdraw an equivalent amount of currency or to draw checks to that amount. The precautions that a bank takes to safeguard its funds are not taken, as the depositors

often think, to safeguard the funds of the depositors simply because the funds do not belong to them. It has been pointed out above that the bank never has as much money as it owes its depositors, for that would require it to have 100% reserves and deprive it of earning assets. What the bank has is an assortment of earning and nonearning assets which is presumably so allocated that it provides the bank with the maximum income consistent with the adequate safety of the rights of the depositors. Thus, while some people may "keep their money in the bank" for reasons of safety, what they are actually doing is exchanging their money for a bank's promise to pay it back. The bank's promise, as a matter of fact, may be safer than currency, in view of the danger to currency of theft and fire, and in view of deposit insurance covering the majority of bank deposits.⁴

Reasons for Deposits

Besides safety, other motives lead people to maintain bank deposits. Among the foremost reasons is the convenience of checks. Checks may be drawn for the exact amount involved in a transaction, sent anywhere in the country, and the canceled checks used as receipts. The growth in recent years of so-called "metered" deposit plans indicate that, if necessary, people will pay for the privilege of using checks rather than currency for many transactions. Many banks have instituted plans whereby the depositor is charged five or ten cents for each check drawn and for each deposit in order to make possible the economical handling of small deposits.

Another reason influencing the businessman primarily is the tendency of banks to favor their depositors in making loans. This "accommodation," as it is called, is a characteristic of American banking. The depositor who has maintained a balance for a long time at a bank comes to feel that he has a "right" to borrow from that bank, and usually the banker tries to accommodate such customers. This is another of the traditions upset by the great growth of funds during World War II, as bankers began to advertise for borrowers among their noncustomers.

⁴ While this chapter was being written, the writer noticed newspaper stories concerning the near-loss from fire of \$20,000 by a resident of Atlanta. That amount of currency was badly charred when his house burned, but the Treasury pieced most of the bills together and replaced practically the entire amount. That is one instance of bank deposits being safer than currency.

Finally, the reason of income, or interest, must be mentioned as a factor in maintaining deposits. It was noted in a preceding section that interest is no longer paid for demand deposits, but it is paid for time deposits under the limitations placed by the Board of Governors of the Federal Reserve System. When the depositor finds, as he does today, that his bank deposit is insured up to \$5,000 by the Federal Deposit Insurance Corporation and that he will be paid interest by the bank, he is, of course, not so likely to hoard currency. Banks also perform various services for their depositors which have some value although they are intangible. Bankers are often asked for advice concerning investments; they will arrange purchases and sales of investments for their customers, collect interest coupons, and the like.

Certain questions have doubtless been raised by the foregoing description. Some of these questions concern the nature and amount of reserves, types of loans, types of investments, relative amounts of loans and investments, interest charges, and many questions relating to the effects of such loans and investments on business activity and prices. These questions will be taken up in the next few chapters by first examining the interaction of banks acting as a system, reserve policies and the regulations governing them, and the banks' loans and investments.

VI

A BANKING SYSTEM

THE previous chapter explained how a bank acquires reserves, primarily by getting deposits, but also through the investment of funds by its stockholders and from earnings. It was also shown how a bank normally lends or invests a large fraction of the money deposited with it in order to earn a return on the funds in its safekeeping. We now turn to an examination of some of the results of this process in a banking system made up of many banks. For explanatory purposes we will first adopt two hypothetical examples that lack reality, as will be seen. By their example, the actual operation of the banking system will become more apparent.

A Monopolistic Bank

The first hypothetical example is a monopolistic bank, the only bank that is allowed to operate in a certain society. For the convenience of its customers, it may operate branches, but any assets or liabilities of a branch are part of the total assets or liabilities of the single bank. To avoid any difficulties with arithmetic, we will also use small figures, but if the figures are thought of as proportions, rather than absolute amounts, they will be found to carry important implications.

We will assume, then, that the bank has been in operation for some time, and therefore has a portfolio of loans and investments. Its balance sheet looks like this:

MONOPOLY BANK			
<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 100	Deposits	\$1,000
Loans and investments	900	Capital	100
House and fixtures	200	Surplus	100
	<u>\$1,200</u>		<u>\$1,200</u>

Excess Reserves and Loans

On the assumption that a 10% reserve is the minimum that the officers of the bank think safe to have, or the minimum allowed by law, it is clear that the bank cannot have any greater volume of earning assets than it already has. It has no excess reserves to lend. However, suppose now that \$100 of new reserves are introduced into the banking system. Perhaps the country is on a gold standard, and an additional quantity of gold has been sold to the government, and the proceeds put into bank deposits by the miners, or perhaps the government has printed an issue of credit money which, after it has been spent, has been put into bank deposits. In any event, let us suppose that the new deposits change the balance sheet to read as follows (since the capital and surplus and banking house and fixtures are unaffected we will ignore them in the following figures) :

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 200	Deposits	\$1,100
Loans and investments	900		
	<u>\$1,100</u>		<u>\$1,100</u>

The bank's reserve ratio has increased from 10% to 18.1%, so that it has excess reserves. Put another way, the required reserve is now \$110, and the excess reserves amount to \$90. Let us assume that the bank promptly makes a loan of this amount, and that it gives the borrower a deposit of \$90 for his promissory note for that amount. (We are ignoring here for simplicity the interest payable

on the loan.) The balance sheet will then show \$990 as loans and investments and \$1,190 deposits. Several things may now happen. The borrower may withdraw the \$90 in cash. He may draw checks for \$90, and the recipients may cash them. Or he may draw checks, and the recipients may deposit them. If cash is withdrawn, by the borrower or his creditors when they get his checks, the cash will probably soon come into the hands of people who will deposit it again. If people do not want to spend cash as cash fairly soon, they usually deposit any unusual cash incomes in their banks from which they can either spend them by check or withdraw them as cash later. So, whatever happens, the \$90 will probably be deposited again in the bank, directly or indirectly, and the \$90 deposit checked out by the borrower will be built up again by someone else. Therefore, the bank has again \$200 in reserves, as against \$1,190 deposits. It still has excess reserves, but not so much as before because the required reserves for deposits of \$1,190 amount to \$119. Excess reserves are thus \$81.

So a second loan, this time for \$81, may be made, again by crediting some borrower with a deposit. The balance sheet changes to :

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 200	Deposits	\$1,271
Loans and investments	1,071		
	<u>\$1,271</u>		<u>\$1,271</u>

Again supposing that the borrower pays other people by check and that they deposit the checks to their accounts, the bank loses no reserves, but again has "tied up" some of them in reserve against the increased deposits. Consequently, this process may be repeated as long as the bank has any excess reserves. The point at which it will have no more will arrive when the original excess reserves of \$100 support new deposits of \$1,000, and at that point the balance sheet will show :

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 200	Deposits	\$2,000
Loans and investments	1,800		
	<u>\$2,000</u>		<u>\$2,000</u>

If the bank officials anticipated this process and were sure that the new deposits they grant as a result of having excess reserves would not create a drain of reserves, they might immediately lend far more than they have reserves. However, this is a large "if," because, when they grant a borrower a deposit, they probably are not sure that the people to whom he gives checks will not cash them and draw out reserves. If the bank lent, say \$500, when its total reserves were \$200, it would create the right to withdraw \$300 more than it can pay without liquidating earning assets, and it would probably not run this risk. By the step-by-step process described above, on the other hand, the bank is always lending only what is considered excess reserves, and if the whole loan results in withdrawals it still has an adequate fractional reserve for the remaining deposits (10%).

Repayment of Loans

It might be asked what will happen when these loans are repaid. Since this is the only bank in the society, all of the bank deposits used as money by the business community are deposits of this bank. Debtors get incomes and build up their deposits, the money coming from other people in the course of business. They get checks, in payment for their goods or services, from other depositors, so the deposits of these other depositors decline. The total deposits remain the same. When a borrower has a large enough deposit, he draws a check against it in favor of the bank and repays his loan. This eliminates his deposit, as well as the loan, and the bank can lend the same amount to others. It does not get any additional reserves, but some of its reserves are now excess because of the reduction in deposits. The repayment of a \$50 loan would alter the balance sheet from its last figures to:

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 200	Deposits	\$1,950
Loans and investments	1,750		
	<u>\$1,950</u>		<u>\$1,950</u>

Whether the bank would promptly lend the whole \$50 or not, or lend only its new excess reserves of \$5.00 and go through the step-by-step process, would depend, as explained above, on how confident it is of

not losing reserves by withdrawals of cash. The repayment of a bank debt thus reduces the volume of money in the form of demand deposits, but the volume may be restored by further lending.

Competing Banks

The next hypothetical example involves the use of several banks, rather than a single monopolistic one. The purpose of this device is to show how the step-by-step process would work out if each bank promptly lent its excess reserves as it gets them. We will assume that there are several banks, all of which have balance sheets like the one we started with for the monopolistic bank. We will next assume that one of them gets a new deposit of new money, just as the monopolistic bank did, and that it lends the excess reserves of \$90 which result from the \$100 deposit. Now, however, there is a strong likelihood that, when the borrower draws his checks and spends them, they will go to people who have deposits in other banks. These banks will then have the checks, which give them the right to withdraw that amount of reserves from the first bank. (The mechanics of this transaction are explained more fully in the next chapter.) Perhaps some of the checks will be redeposited in the same bank, but to a large extent they will go to competing banks, which we will call Banks B, to distinguish them from the first bank, Bank A.

These Banks B, then, will have new deposits of \$90, which will require a 10% reserve and give them \$81 of excess reserves. They lend a total of \$81 and give the borrowers deposits of that much. The borrowers spend checks which the recipients put into Banks C. Of course, Banks C may overlap Bank A and Banks B; but, regardless of this, the deposits granted to the borrowers remain as bank deposits somewhere in the banking system. Consequently, these banks have new deposits of \$81 and therefore excess reserves of \$72.90. These again may be lent, giving rise to deposits of that amount and excess reserves of \$65.61. The process may go on and on until the excess reserves disappear. Under our assumption of a 10% ratio, that point again arrives when deposits created by these loans are \$1,000, or ten times the original excess reserves of \$100. The loans that will have been made in the process amount to \$900, as the first deposit, by which the banks got the \$100, must be included in the \$1,000 total.

TABLE 1

THEORETICAL EXPANSION OF DEPOSITS WITH
A 10% RESERVE RATIO

	New Deposits (100%)	New Loans (90%)	Reserves Kept (10%)
Bank A	\$ 10,000	\$ 9,000	\$ 1,000
Banks B	9,000	8,100	900
Banks C	8,100	7,290	810
Banks D	7,290	6,561	729
Banks E	6,561	5,905	656
Banks F	5,905	5,315	590
Banks G	5,315	4,784	531
Total, these banks	\$ 52,171	\$46,955	\$ 5,216
Other banks	47,829	43,045	4,784
Total	\$100,000	\$90,000	\$10,000

These are the two hypothetical examples that introduce the explanation of how bank credit in the form of deposits is expanded by the lending process. It has already been pointed out that bank deposits are a substitute for other types of money, and this is the method by which the substitute money is "manufactured."

Lending "In Step"

We may now drop the "step-by-step" explanation and go a stride closer to reality by describing the process as the "in-step" process. We now assume that two banks both have excess reserves and lend them at about the same time. Bank A lends to Mr. A and Bank B lends to Mr. B, both of whom take their loans in the form of deposits at their banks. Mr. A buys goods from Mr. C and Mr. B pays a debt to Mr. D. Mr. C deposits his check in Bank B, and Mr. D deposits his in Bank A. As a result, each bank has a claim against the other bank. We may assume that each bank sends reserves to the other or that they cancel their claims. In either event, the banks do not, in effect, lose reserves. They are thus in a position to lend again. In this respect, they are like the monopolistic bank we started with. Individual banks may lose reserves, but if they lose them to other banks the banking *system* does not lose them. To the extent that one bank loses reserves, another bank gains them by clearing checks and can make loans in place of the first bank. Consequently, wherever

the reserves may actually wander through the banking system, each time there is a deposit, the deposit gives rise to excess reserves, which in turn may be lent as a new deposit. Thus we come again to the same arithmetical answer, that the lending process can go on as long as there are excess reserves, and if we assume a 10% reserve ratio, this will continue until deposits again are ten times the reserves.

Limits and Qualifications

We may now introduce some limitations that usually occur to reduce expansion in the actual banking process. The first limit to notice is the reserve ratio itself. Clearly, if we had assumed a 20% reserve ratio required by law or safety, each bank could have lent only 80% of the amount deposited with it. Reserves would then be used up when deposits were only five times reserves. A 25% reserve ratio would have limited the expansion still further. The actual required reserve ratio varies, not only when the Board of Governors changes the legal requirements, but also with changes in the relative proportions of time and demand deposits, which have different requirements, and with changes in the proportion of total demand deposits held by banks in central reserve or reserve cities and country locations. For demand deposits only, the required reserve today would be between 14%, the required reserve for country banks, and 20%, required of the other two classes of banks. Including time deposits, the required ratio declined from around 9% in 1918 to about 7% in 1929, and then rose to about 8% in 1936. The Board of Governors increased the requirements to an average of approximately 16% in 1937. At that time the increase was required so that the excess reserves then existing could not result in a multiple expansion of loans such as has been described hypothetically above.

There are other limits which operate to reduce the possible expansion on any given reserve ratio. These are (1) loss of cash to the public for circulation, (2) export of cash, and (3) growth of time deposits.

The increase in loans presupposes an increase in business activity and possibly higher prices. More people are probably employed, incomes are probably higher, and people are probably spending more money. People who are paid in currency and do not have bank deposits have more money in their pockets. Other people who do have

bank deposits and withdraw cash occasionally for cash expenditures draw out more money. Daily sales at the stores are greater. In these ways more of the cash gets into the pockets of the people and the cash registers of business instead of being in the banks where it can be counted as reserves. This reduces the *amount* of bank reserves, so whatever the reserve ratio, the banks cannot lend these funds that they do not have. The expansion in such circumstances may not reach the full limit described above.

Also, when people's incomes are large, and especially if prices rise, people are inclined to purchase more goods from foreign sellers. This will tend to result in the export of cash (gold, if we are on a gold standard) and a consequent reduction of bank reserves, which limits the expansion in the same way as the loss of cash to circulation. It may be noted, however, that if the banks have the right to issue notes, they can meet the drain to circulation by paying out notes, thus merely substituting note liabilities for deposit liabilities. In this circumstance, they would not lose reserves to circulation. The export of money, however, would reduce their reserves because people are not likely to pay foreign debts with bank notes.¹

Finally, the rise in demand deposits will probably be accompanied by a rise in time deposits. The extra money will get partly into the hands of people who do not wish to spend it and who deposit it in time accounts. The banks will thus obtain the reserves again, as before, but the time deposits will require reserves, too, so the excess reserves available will be that much less. The expansion of demand deposits will be correspondingly less.

Furthermore, there is a tacit assumption throughout the whole analysis that there is a sufficient demand for loans and a sufficient willingness on the part of the banks to lend so that excess reserves are used fairly promptly. In general, this is fair assumption because bankers do not like to keep idle funds which might be earning interest. If borrowers are not taking all of the lendable funds available, the banks can buy bonds with the remainder. However, if bond prices are high and the banks have unusually large amounts of excess reserves, they may consider it wiser to leave the funds idle and wait for borrowers and for lower bond prices. This situation prevailed during the late 1930's.

¹ The manner in which standard money may be exported is explained in Chapter XVII.

Clearly, it is impossible to predict in any given instance just exactly how all of these limiting factors will act. Correspondingly one cannot formulate a rigid rule that, given a 20% reserve ratio, new reserves will result in a fivefold increase in bank deposits. However, the general outlines of the process are clear enough. Since banks operate for profit and usually lend or invest about all they think they can, it is apparent that any increase in reserves will probably lead to an increase in loans and investments on the one hand, and deposits on the other, of several times the amount of increase.² Conversely, it also follows that any net decrease in reserves, in the absence of excess reserves, will force banks to reduce their loans and investments by several times the amount of decrease.

Assume, for example, a banking system in which the combined deposits of the banks are represented by the figure 100, reserves 20, and earning assets 80. If withdrawals of cash reserves amount to 10, so that deposits are 90, reserves 10, and earning assets 80, the reserve ratio drops from 20% to 11.1%. In order to restore the 20% ratio, the banks must, unless they can get new reserves, reduce their deposits somehow to 50. They will try to get reserves by calling in loans or selling investments. As people pay their loans or buy bonds, they give up deposits. The banks as a group may in this way only gain reserves from each other, with no increase in total reserves, but the volume of deposits decreases along with the volume of bank loans and investments. This process of reducing deposits is an important deflationary influence in periods of business recession.

Loans, Investments, and Deposits

As a result of the operation of the banking system in the manner just described, the supply of money in a modern economy is primarily dependent upon the volume of loans and investments of the commercial banks. We are prone to think of banks as lenders of funds that have been deposited, and this is true in a limited sense if we think only of a single bank. The funds deposited in a given bank, however, originated in a loan by another bank. When the given bank lends its excess reserves, deposits are created for other banks. Similarly, when

² Ray B. Westerfield, *Money, Credit and Banking*, Chapter 12, develops formulas that embrace the variables determining the amount of expansion, based on articles by J. W. Angell and K. F. Fieck in *Journal of Political Economy*, XLI, Nos. 1 and 2.

a depositor draws down his balance to repay a bank loan, his deposit, and thus the total of bank deposits, is reduced. Thus, the volume of bank deposits subject to check, which are the largest part of the money supply, fluctuates with the volume of bank loans and investments. The use of fractional reserves makes the fluctuation possible. An understanding of this process is basic to the whole subject of money and banking and to nearly all of the analysis in the following pages.

Contrast between a Single Bank and the System

It is clear from the foregoing that the individual banker can lend out only the funds that have already been entrusted to him. It is possible to theorize about situations in which the individual bank could create deposits in excess of its excess reserves, but they lack reality and in any event do not greatly change the primary conclusion. For example, if a banker knew that when he made a loan in the form of a deposit the funds would be turned over by the borrower to another customer of the bank and be redeposited, he might grant a loan that exceeds his excess reserves. If the banker has \$1,000 of excess reserves and a borrower wants \$2,000 to pay for goods sold by another depositor, the banker can anticipate that the check drawn to pay for the goods will be redeposited with him. His reserves will thus remain the same while his loans and deposits are increased by twice as much. However, even here he might wonder whether the new owner of the \$2,000 deposit might not spend the money in such a way that checks for that amount would be deposited in other banks, and in this case again he would be faced with the necessity of paying other banks \$2,000 although his excess reserves (without the \$2,000 deposit) are only \$1,000. Hence, the banker is most likely to follow the more conservative course of lending only his excess reserves so that no matter what happens as a result of the loan he is not likely to find himself deficient in reserves.

Of the limits to loan expansion, it will be noted that the one which primarily affects the individual bank is the loss of reserves. In the case of the individual bank this loss is to the other banks, and this is the reason that the banking system can create deposits by making loans although, paradoxically, the individual members of the system cannot create deposits in excess of their excess reserves. The loss

of cash to circulation is not likely to be an important factor in limiting the operations of the individual bank simply because the individual bank can hardly expand its deposits in such volume that the need for currency would be influenced. Since the banking system, on the other hand, does not lose reserves when reserves merely move from bank to bank, it is the loss of cash to circulation that plays the larger role in limiting the expansion of deposits by the system. One reason for the impossibility of determining a precise formula by which to predict the exact amount of deposit expansion or contraction resulting from a given increase or decrease in reserves is the fluctuating ratio between the public's bank deposits and the public's currency. If, for example, the public always held \$1.00 in currency for each \$10.00 of demand deposits, we could show how the expansion of deposits would be limited by this loss of reserves amounting to $\frac{1}{10}$ th of the increase in deposits. The ratio varies, however, as public opinion concerning the safety of banks and other factors vary. During the war years the proportion of money held in the form of currency rose so that at the end of the war it was about \$1.00 in currency for \$4.00 of demand deposits. Previously it had been in the ratio of 1 to 6 or 1 to 8 at various times.

The individual banker often resents public statements that banks create deposits or create money. Many times bankers are puzzled as to how they could be "accused" even of being capable of so doing, let alone doing it. The banker knows very well from his own operations that his loans and investments result from his deposits; if his deposits grow he can make more loans and investments, and if they decline he must liquidate some of his earning assets. What these bankers overlook, of course, is that deposits also depend upon loans and investments. If other banks are lending, the individual banker will get deposits, which will in turn permit him to lend, and this in turn will provide deposits for other banks in the system.

Role of Reserves

The foregoing discussion has concerned the possible growth of bank deposits subject to check under certain conditions with a given volume of reserves. The question naturally arises as to how great the volume of deposits might thus become considering the possibility of additional reserves. In other words, if the volume of reserves

could be increased, the volume of loans could be increased proportionately. The question of how great reserves themselves might become is primarily the problem of the next chapter. It might well be pointed out in the present section of this chapter, however, that the volume of bank reserves depends to a large extent upon the type of money system in use in a country. It can be seen from preceding chapters that, if a country has a gold standard and if a large part of the circulating currency is gold coins or gold certificates, the volume of bank reserves will be much more limited than if the standard money of the country is merely the promises of the government circulating in form similar to the Civil War greenbacks.

Similarly, if there is a central bank in the country that will lend reserves to the commercial banks and provide them with currency if there is a loss of reserves to circulation, then again there can be a much greater expansion of bank credit on the basis of these reserves. It will suffice here to say that in a modern monetary system like that of the United States the volume of bank reserves is highly expansible by monetary authorities, both by altering the rules that determine what is and what is not bank reserves and by providing more of them. Reserves are definitely not some given quantity which does not change, but as will become more and more apparent in succeeding chapters, they are on the contrary highly elastic and manageable quantities. Hence any discussion of the possible limits to deposit creation by the banking system must await a preliminary discussion of what bank reserves are and of the policies that might be followed by those in charge of administering them in the system as it operates today.

Credit and Purchasing Power

A great deal is heard in recent years concerning the importance of purchasing power as a determinant of business conditions. Businessmen anticipate "good times" when consumers are expected to have a relatively large volume of purchasing power and "bad times" when purchasing power is expected to be smaller. It is appropriate here to consider the effect on purchasing power of the fluctuations in bank credit analyzed in the preceding pages.

Bank Credit and Other Credit

In the first place, the meaning of purchasing power itself must be uniformly understood. The term implies the power to purchase goods and services. It must therefore be synonymous with the ownership of money. People without money have no purchasing power. They may be able to acquire money by earning it or borrowing it from individuals or banks or by selling assets for money, but until they do obtain money they do not actually have purchasing power. We would thus not include as purchasing power the ability or power a person might have to buy goods on credit, and would argue that he has not yet purchased them, since he has not paid for them. The reason for this distinction lies in its importance in the analysis of changes in the volume of purchasing power and in the influence on these changes of differences in bank and other types of credit.

If we understand purchasing power to mean money, or the ownership of it, and also understand that most money is credit, either bank credit or government credit, there is a clear connection between the volume of credit and the volume of money or purchasing power. Unfortunately, the word "credit" itself has many meanings, and hence it is necessary to consider what meanings we have in mind in considering the relation of credit to purchasing power. These meanings are probably best differentiated by making a distinction between bank credit and other forms of credit.

Except for standard money, money is credit, but not all credit is money. Those debts which are commonly used as means of payment have already been included in the definition of money, that is, bank debts (deposits) subject to check and government debts (notes). There are many other forms of credit, but it will be argued that increases in them do not increase purchasing power because they do not increase the volume of means of payment. When a debt is created by a loan between two individuals, for example, there is no increase in purchasing power, because the borrower merely has the purchasing power that the lender has given up. If the borrower has given the lender an evidence of the debt, it will be most unlikely that the lender will be able to spend it (use it as purchasing power), as was pointed out in the last chapter.

In the same way, when a debt is created by use of trade credit, there is no net increase in purchasing power, as might at first appear. When customers are allowed to purchase goods "on credit" at a retail store, or when retail stores buy on credit from their wholesalers, and so on, it might appear at first as if the buyers' purchases are a net increase over the purchases that would otherwise take place. However, on analysis this does not appear to be true because some other person's purchasing power will be reduced unless there is a corresponding increase in bank credit. The retail store must (1) reduce its own purchases for inventory when it allows its customers to have goods without immediate payment or (2) buy from its suppliers on credit or (3) use funds for this purpose which it could otherwise have spent for other purposes or (4) borrow additional funds from banks. A fifth possibility would be that the retail store borrow elsewhere or get new funds from its stockholders. Each of these possibilities reduces the spending that could otherwise take place, except numbers two and four. The former merely postpones the problem since the wholesaler then has the same set of possibilities. If the store reduces its purchases by the amount of credit extended to customers, there is a clear balance, as there is under the third possibility. If individual lenders or stockholders supply more funds, their purchasing power is, of course, merely transferred to the store, and the increase in purchases on credit by the store's customers is offset by the reduced purchasing power of these two groups. If the store borrows additional funds from its bank, however, it will be able to replenish its inventory before its customers pay for their goods.

There have been periods when credit, using the word in a general sense, increased greatly although purchasing power did not.⁸ During the decade of the 1920's, various types of loans increased much more rapidly than was normal, but the volume of demand deposits outstanding as a result of these loans did not increase in the later years of the decade; in fact in 1928 and 1929 there was a net decline. This was caused not only because of the large growth of nonbank loans but also because some of the increase in bank lending was not accompanied by increased demand deposits. This is possible because of the existence of items on the banks' balance sheets other than

⁸ Laughlin Currie, *The Supply and Control of Money in the United States*, Cambridge, Harvard U. Press, 1934, Chapter V.

those emphasized in this and the last chapter; for example, an increase in loans may be accompanied by an increase in the capital of the banks or by a decrease in reserves if there are excess reserves that the banks can afford to lose. The prosperity of these years, therefore, was caused more by an increased use of existing purchasing power than by an increased supply of it. Existing money was spent more often, or, to use a phrase described later, its velocity of circulation increased.

Credit and Income

The volume of credit depends largely upon forecasts of incomes. To use the store in the above example, it would not have extended credit to its customers unless it anticipated that its customers would be able to pay their debts out of their anticipated incomes. Similarly, the wholesaler does not sell goods on credit unless he expects that the retailer's income will permit him to pay for them; the manufacturer makes the same estimate of his customers' incomes, and so on. The extension of credit may also involve an estimate of the debtor's wealth or capital, so that, if the estimate of income turns out to be wrong, the debt may still be paid from the debtor's capital possessions. However, lenders do not anticipate this eventuality or they would not make the loans because of the risk, expense, and other inconveniences of foreclosures. The volume of loans that may exist at any time, either bank or nonbank, is thus conditioned strongly by the psychological atmosphere at the time. If estimates of future incomes are optimistic, loans are more freely granted; when they are pessimistic, lenders hesitate to extend credit. Hence we find the volume of bank deposits, the purchasing power of the community, varying from time to time in accordance with this factor, often called "business confidence."

During times of war, the volume of bank credit expands greatly for other reasons. The government typically borrows heavily from the banks and thus obtains additional purchasing power that it can use in getting goods in competition with other buyers. When the deposits are spent by the government, the recipients have the purchasing power. Essentially, that is the explanation for the great increase in purchasing power between the beginning and the end of the recent war. On the other hand, the entire increase in the gov-

ernment debt did not result in increased purchasing power because a large part of the bonds sold were bought by individuals and nonbanking corporations, who merely transferred their purchasing power to the government.

VII

BANK RESERVES

BEFORE proceeding with the analysis of banking operations in general, a further analysis of the bank's reserves should be made. It appeared in the preceding chapter that a bank has funds deposited with it part of which it lends or invests. The remaining part constitutes the reserves. It is apparent, therefore, that there is a relationship between deposits, reserves, and loans. This relationship may be expressed as "deposits equal reserves plus loans (and investments)." This relationship need not be exact because of the existence of other assets which the bank may obtain in the place of loans or investments and because some of its funds are derived from stockholders rather than from depositors. However, the relationship is a basic one that helps in an understanding of the operation of individual banks and the banking system.

Composition of Reserves

It also appeared in Chapter V that the banker maintains reserves primarily to meet the net withdrawals that occur when withdrawals exceed new deposits thus creating a decline in total deposits. It fol-

lows that the reserves should be in whatever form is acceptable to those making the withdrawals. It is easiest to introduce the concept of reserves by assuming that they are currency; in other words, that depositors deposit hand-to-hand money and make their withdrawals in the same form. However, the actual operation of the banking system is not this simple because so many transactions are settled by checks. Generally, net withdrawals are the result of more checks being drawn against a bank by its depositors during a given interval than there are checks being deposited at the bank. In this way, other banks have checks to collect from the individual bank and it loses reserves to them. Conceivably, these settlements could be made by transfer of currency, but when many banks are involved this would be a cumbersome procedure. Banks find it to their advantage to place some of their reserves in a local "clearing house," the function of which is to facilitate settlement of these interbank claims between banks in the same locality. Thus, a second form of reserves employed by banks, in addition to "cash in vault," is this clearing house balance.

The Clearing House

To illustrate the operation of a clearing house, assume that there are four banks in a town. During any day, each bank will receive deposits consisting of checks drawn against each of the other three. Bank A could send a messenger around to the other three banks with the checks drawn against each, and bring back the currency necessary to settle each of the three claims, and Banks B, C, and D could do likewise. A simpler arrangement and one that requires a smaller volume of reserves is one that requires settlement only of net balances. Bank A, for example, compares the amounts of checks drawn against Bank B which have been deposited in A with the total of checks drawn on it and deposited in B. The one owing the other pays the net amount. Banks A and C, A and D, and other pairs of banks do likewise. The way this settlement is done in practice is that each of the four banks makes up three bundles of checks, each bundle containing those drawn on one other bank, and sends these to the clearing house. There a clerk can quickly enter the amounts of the bundles on a form similar to the one below in which illustrative figures have been inserted.

AMOUNTS OWED TO—	AMOUNTS OWED BY				Total
	A	B	C	D	
A		100	150	200	450
B	125		125	200	450
C	150	175		150	475
D	100	150	150		400
Total	375	425	425	550	1,775

The totals for the three bundles brought by Bank A are entered in the row marked A, and so on. "Bank clearings" for the day total \$1,775, this being the amount of bank deposits flowing between banks.

By checking the columns and rows, it will appear at once that Bank A is owed \$100 by Bank B, \$150 by Bank C, and \$200 by Bank D, whereas it owes \$125 to Bank B, \$150 to Bank C, and \$100 to Bank D. It is unnecessary for it to settle each of these balances (one of which happens to be zero) because the clearing house can ascertain further that Bank A owes a total of \$375 and is owed \$450, with a net credit of \$75. Similarly, Bank B is owed \$25, Bank C has a net credit of \$50 and Bank D owes \$150. On this particular day Bank D has lost reserves to the other three banks, the \$150 deficit being divided as above. When the clearing house was established, each bank turned over a certain amount of reserves to the clearing house to use in settling these gains and losses. Assuming that each bank started this day with \$300 deposited at the clearing house, at the end of the day Bank A will have \$375, Bank B \$325, Bank C \$350 and Bank D \$150. Later transactions will restore the original balance or Bank D will run out of funds and have to replenish them from some other source, and the banks which persistently gain will be able to withdraw funds for other uses.

Reserve Bank Balances

Out-of-town items may be collected in a similar manner with a Federal reserve bank acting as a regional clearing house. Let us suppose that a bank in Durham, N.C., gains a deposit in the form of a check drawn against a bank located in Greensboro, N.C. It may mail this check, along with other out-of-town items, to its Federal

reserve bank in Richmond, Va., for collection. In other words, it makes a deposit at the Federal reserve bank. If the Greensboro bank maintains a deposit at the reserve bank too, the reserve bank adds the amount of the check to the account of the Durham bank and subtracts it from the account of the Greensboro bank. The transaction is handled in the same way as the Durham bank would settle a transaction between two of its own depositors.

Consequently, an important form of bank reserves is the deposit, or reserve balance, that member banks maintain at their respective reserve banks. The system of clearing checks just described is available to banks which are members of the system and other banks which maintain balances for the purpose. They all agree to pay checks drawn against them at par.

Correspondent Banks

Prior to the establishment of the reserve system in 1913,¹ out-of-town items were often settled by the use of correspondent banks. A correspondent bank is a bank that holds a deposit of another bank and performs certain functions for the other bank, similar to the functions a bank performs for its customers. It may collect items due in its vicinity for the customer bank, purchase bonds for it, give it advice on investments, and make loans to it. As far as the correspondent bank is concerned, the deposits of other banks give it funds just as do the deposits of other customers. It attempts to attract these funds by offering these services and, until recent legislation, by paying interest on them.

To collect an out-of-town check prior to the setting up of the Federal Reserve System, a bank might mail it to a correspondent bank in the same way as a bank might today mail it to the Federal reserve bank. Banks which do not use the reserve system may employ correspondent banks today, and member banks also frequently use correspondents. The proceeds of the check are deposited to the account of the bank, and this is a simple method by which to build up these correspondent accounts. The bank may then purchase bonds or otherwise employ the funds by drawing checks against the account. Another reason for using correspondent banks in the past, however, was that the paying banks often made a charge for shipping cur-

¹The use of reserve banks as clearing agents on a voluntary basis began in 1913.

rency directly to meet the checks drawn against them. They reasoned that their obligation to their depositor was merely to repay, over their counters, the funds that had been deposited with them and did not include the sending of funds wherever his checks may have been sent. A check for \$100 might, therefore, be deposited in Bank A, which would credit that amount to its depositor, but Bank A would be able to get only, say, \$99.75 from Bank B, on which the check was drawn, although Bank B would charge its depositor with the \$100. If Bank A deposited the check at its correspondent, Bank C, Bank C would credit it with \$100 because it was anxious to have the deposit. It would either absorb the exchange charge of 25¢ or avoid it by sending the check to still another Bank D for deposit. Eventually the check might be deposited in a correspondent bank located in the same city as Bank B and be collected at par through the local clearing house.

The defects of the system were the slowness of the collection process and the fictitious reserves that appeared to be created. It might take weeks for a check to circulate around various parts of the country before it was charged to the account of the person who drew it, and so there was a large volume of these checks in transit at all times, called the "float." Bank A, in the meantime, had reserves in the form of a deposit at Bank C, Bank C had reserves in the form of a deposit at Bank D, and so on. As an incidental result, if the check were not cleared for perhaps a month, the drawer of the check could draw other checks against the same deposit, planning to make other deposits in time to cover the check when it did arrive. This would amount to his getting a free loan from the banks for the interval.

Today, to summarize, banks may meet withdrawals in excess of new deposits, depending upon what form they take, by the use of currency over their counters, clearing house balances, or balances at other banks, including the reserve banks. These reserves are money owned by the bank which has been deposited with it and which the bank may lend or invest if it obtains an increase in reserves through an excess of deposits over withdrawals.

Legal Reserves

So far, legal regulations concerning reserves have not been mentioned. It was pointed out that each banker would tend to lend as

much of his funds as possible, keeping in the form of reserves the minimum considered necessary for safety. In order to curb this tendency among less reliable bankers, state and Federal banking laws have almost always required that some minimum reserve be kept, although in some foreign countries minimum reserves are left to the bankers' discretion. Consequently, certain reserves, those that must be maintained by law, are "legal reserves" and the remainder, if any, are "excess reserves." Banks which are members of the Federal Reserve System must keep their legal reserves in the form of reserve bank balances. They are, of course, free to keep as much reserve as they like in other forms, and they may maintain their reserve balances larger than required. Strictly speaking, the term "excess reserves" is usually applied only to the reserve bank balances in excess of legal requirements. In a more general sense, however, all reserves over and above those required by law are excess reserves. The significance of excess reserves is that they indicate the amounts that the banks have readily available for making additional loans and investments.

A banker could hardly manage to keep his reserve bank deposit from day to day at exactly the right amount to meet the average required. Although banks might allow their reserve balances to dip below the requirements and borrow enough to meet them, normally a banker tries to keep a small margin above his required reserve to allow for declines through unfavorable clearing balances. This fact illustrates the technical meaning attached to the term "excess reserves" because while such balances are excess they are more or less required by operations if not by regulation. They may therefore be called "working reserves." In a similar way, the balances maintained at correspondent banks and any till money in excess of that required by day-to-day deposits and withdrawals of currency should be included in the banker's working reserves. The working reserves are his more or less free funds which permit the banker to make additional loans, purchase securities, or meet withdrawals as circumstances permit.

Federal requirements are embodied in the Federal Reserve Act, which specifies reserves of 7% of demand deposits for most banks, 10% of demand deposits for banks in certain specified larger cities and 13% of demand deposits for banks in New York City and

Chicago.² Later legislation gave the Board of Governors of the Federal Reserve System the authority to raise these requirements up to double the statutory figures. This authority has been exercised, and in 1936 and 1937 changes were made raising the ratios to 14%, 20%, and 26% respectively. The statutory requirement for time deposits is 3%, now raised to 6%. Requirements for central reserve city banks (New York and Chicago) were later reduced so that after Oct. 2, 1942, the respective ratios for demand deposits became 14%, 20%, and 20%. The reasons that larger reserves are required for city banks are (1) they are often correspondent banks and are therefore required to maintain a larger margin of safety for the benefit of the banking system in general, and (2) their demand deposits are more active (deposits and withdrawals are more frequent on the average), so it was thought a disparity between new deposits and withdrawals might be more likely.

Paradox of Required Reserves

The requirement of legal reserves has resulted in a paradoxical situation in that since they are *required* they may not be *used*. People often think of the banks' reserves as money which will be paid out when depositors want their money, such as during a period of distrust of banks. This is true, although the foregoing description was purposely couched in terms that emphasized the normal day-to-day use of reserves. But if a bank pays out so much reserves that all that it has left are required reserves, it is blocked by the law from paying out more and must stop paying even though it still has reserves.³ In

² Originally the 10% ratio applied in 18 centers, but the number of such cities has grown to approximately 60.

³ In some cases the law may permit the paying out of required reserves upon payment of a penalty. Further, the requirement is an average, and banks often dip below the required percentage for short periods. "Under Board Regulation, established in connection with the assessment of penalties for reserve deficiencies, reserves held must average enough over certain designated periods of time to cover the average minimum requirements. At first each Reserve Bank fixed independently the reserve computation periods for its own member banks. Beginning with October 1, 1919, deposits and reserves have been averaged as follows: weekly for banks in central reserve and reserve cities, except for the period January 1, 1928, to February 28, 1942, during which they were averaged semiweekly for member banks located in Federal Reserve Bank and branch cities and in such other reserve cities as the Board designated; semimonthly for country banks, except for two Federal Reserve districts in which they were averaged weekly until January 1, 1923. On any given day, reserves held may be substantially above or below computed requirements." Thus most banks compute their reserve requirements semimonthly. *Banking and Monetary Statistics*, p. 366.

other words, the reserves cannot be used for the purpose for which they are supposedly maintained. This situation is less likely to happen today, when banks can borrow *additional* reserves from the reserve banks, but prior to 1913, when reserves consisted to a greater extent of cash in vault, it did happen occasionally. There were several periods (notably 1873, 1893, and 1907) when bank failures were common, and, owing to legal restrictions, many banks closed while they still had funds. In the period 1931-1933 also many banks were unable to meet customers' withdrawals.

Functions of Reserves

The primary function of reserves today has thus come to be the regulator of the lending power of the banks. The higher the reserve ratio, the lower is the percentage of additional deposits which a bank may lend. Out of a deposit of \$100 (in excess of current withdrawals), a bank may lend \$80 if the reserve ratio is 20% or \$90 if the reserve ratio is 10%. For the system as a whole, deposits can be expanded to five times reserves if a 20% ratio prevails or to 10 times reserves with a 10% ratio. This is one reason for giving the Board of Governors the discretion to raise or lower reserve requirements for member banks.

Reserves Represent Money

From the point of view of the individual banker, reserves are his assurance that depositors may either convert their deposits to currency or spend their deposits by drawing checks which may be deposited in other banks without embarrassing the banker. The currency kept in the bank's vaults and on its counters takes care of the first possibility, that of cashing checks. This part of the bank's reserves is normally a very small proportion of its deposits, one or two per cent usually being sufficient. It should be remembered that customers are constantly making deposits of currency in the normal course of business, so that the banker is merely receiving deposits of currency with one hand and paying it out to check-cashers with the other. A filling station operator, for example, may deposit his receipts from his daily sales in order to pay his bills by check, and at the same time other customers will probably be withdrawing the same currency for shopping and other purposes, including the pur-

chase of gasoline from the filling station. The *till money*, as this currency at the bank is called, is thus a revolving fund and a small safety margin is all that is required.

Similarly, the portion of the reserves kept in the form of clearing house balances and balances at the reserve banks provides the bank with funds to meet adverse balances resulting from more checks being drawn on it and deposited in other banks than the volume of checks currently deposited with it. Also, these balances can be withdrawn as currency to replenish the till money, if necessary.

It should be emphasized that the reserves are funds which have been deposited with the bank and which have not been lent or invested. At the same time it should be borne in mind that the reserves are pretty much revolving funds, because they are always being added to by deposits and subtracted from by withdrawals. When the volume of deposits is not growing throughout the whole banking system, banks on the average are not receiving any additional deposits, and so their deposits do not give them any additional funds for lending and investing. Only when a bank's total deposits grow as a result of either a general increase of deposits throughout the system or the bank's own individual growth does the banker find himself in possession of funds which enable him to increase his total volume of earning assets.

The reserves held by the individual bank are thus very similar to the cash reserves held by individuals and business firms.⁴ They are the funds which the bank may spend if there are no barriers of law or safety preventing such expenditure. The things that banks "buy," however, are such that we commonly use the words "lend," or "invest" rather than "spend": They acquire bonds, promissory notes, and other interest-bearing assets. Consequently, any assets that the banks may have cannot be considered reserves unless they can be used either (1) to satisfy their customers' demand for cash or other banks' clearing balances or (2) to buy earning assets.

The reason this point is emphasized is the frequently held misconception that earning assets of one kind or another are reserves. The misconception is apparently part of the general lack of understanding of banks, since the same misconception does not arise in connection

⁴ It will be argued in Chapter XV, however, that reserves should not be included in calculations of the supply of money.

with individuals' assets. For example, if I have a sum of money (currency or deposit), that money may be considered my cash reserves. My need for such cash reserves is entirely different from the banks' need for them, but there are many reasons why individuals keep cash reserves. Emergencies arise that require expenditure of money, or funds may be held in reserve for some specific planned use in the future. In any event, if I spend the money it is obvious that I do not have the reserves any longer. In other words, I have exchanged money for another asset that is not money, or I may have paid a

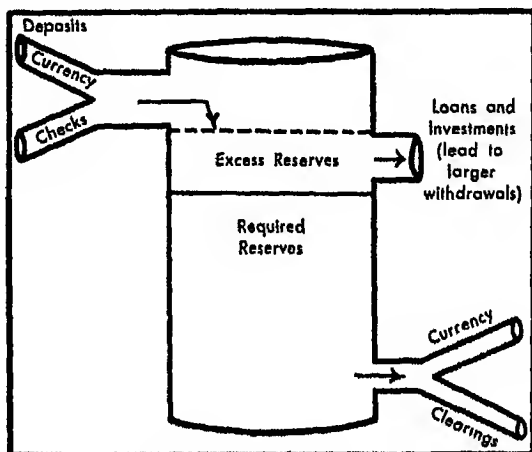


FIG. 3.—Illustration of the Pool of Reserves.

debt with it, in which case I do not acquire an asset but get rid of a liability.

Banks do essentially the same thing. Their assets are made up of reserves and earning assets. To the extent that the banker acquires the latter, he has just so much less reserves. If a bank has \$10,000 above requirements on deposit at the reserve bank it may purchase bonds with these excess reserves. If, some time later, there are large demands for cash at the bank, the banker certainly cannot meet these demands by offering his depositors the bonds. They want currency to spend (or perhaps hoard) and are not interested in buying bonds, for that is what their taking them would amount to, and so the bonds are not reserves. In the same way, if the bank has an adverse clearing balance it cannot normally discharge its debts by turning over these bonds to the other banks. They also want funds with which

they can do as they like; in other words, they want money. What has been said of these bonds is equally true of any other earning assets, and consequently none of them should be confused with reserves. There is a line running between reserves on the one hand and all the other things that can be acquired with reserves on the other. Generally speaking, this is the line between cash items or nonearning assets on the one side and earning assets on the other. Earning assets cannot be reserves because they are not money.

Unfortunately for the writers of textbooks and students, in spite of what has just been said it has to be admitted that occasionally a state law will define some particular earning assets, such as Federal government bonds or the bonds of the particular state, as reserves. We must insist, however, that while such assets may be counted in meeting the requirements of that state, it is a perversion of the words used. For technical reasons the banker may so count these assets for the purpose of making official reports, but the wise banker knows that actually he acquired these assets by giving up reserves and that they are not, in fact, reserves for the reasons stated above.

Beginning in 1946 there was considerable discussion in financial circles of a proposal to require banks to maintain "reserves," amounting to specified percentages of their deposits, in the form of short-term government securities in addition to their reserve bank balances. The proposal arose because of the very large volume of such securities being held by the banks as a result of war finance and because it was feared that the volume of legal reserves might fluctuate drastically should the banks decide to dispose of a large part of their holdings, leading to possible disruptions in the volume of bank lending. Should the banks sell large blocks of government bonds, the reserve banks would probably buy them in order to stabilize bond prices and yields, and pay for them by granting deposits at the reserve banks. These new deposits would become bank reserves. The significance of the proposal to the present discussion lies in the fact that it would actually require the banks to maintain specified *secondary* reserves in addition to their primary reserves.

This discussion already may have made clear that a bank's reserves are not an idle sum of money isolated somewhere and never touched. Actually, the reserves are in constant use, being added to and paid out regularly. Every time a banker sends a check to the

reserve bank for collection he adds to his reserves and every time a check is drawn on his bank and deposited in another bank he loses reserves. When it comes to meeting legal requirements, therefore, it is necessary to resort to periodic accounting and averages. Depending upon location, member banks calculate their required reserves semimonthly or weekly. Actual reserves may, and naturally do, often rise above and fall below the legal minimum, without objection as long as the individual bank maintains an average that meets the requirements.

Secondary Reserves: Liquidity

The banker is never able to tell exactly what reserves may be required in the future. Adverse clearing balances may develop for a variety of reasons in spite of conservative lending, and demands for cash may fluctuate in unexpected ways. Therefore the banker cannot tell just how much working reserves to keep in excess of his required reserves. On the other hand, he is normally desirous of lending or investing as much of any extra reserves as he can in order to obtain the earnings. This situation has led to a compromise policy in that bankers try to acquire earning assets that can quickly be converted back to reserves. The perfectly protected bank would be one that has 100% reserves, but obviously such a bank would have no earnings (unless it charged its customers for the privilege of keeping deposits). The banker can compromise these conflicting interests, however, by lending or investing some of his funds in such a way that he can get the money back quickly if necessary. These assets are not reserves, but since they may be converted into reserves again they are called *secondary reserves*, and the "real" reserves are called *primary reserves*. Thus the demands both for adequate reserves and for earnings are compromised.

Although it is possible to put reserves on one side of an imaginary line and all other assets on the other side, the earning assets comprise a graduated list in the order of difficulty of converting them back into money. The ease or difficulty of converting something into money is its "liquidity"; the easier it is to turn something into money the more liquid it is. (Money itself is completely liquid.) Secondary reserves are thus the more liquid earning assets of a bank. These are of two general kinds: (1) those that are liquid because the banker

expects them to be repaid in a short time, and (2) those that the banker expects to be able to sell easily if necessary. The first group comprises certain special short-term loans and bonds that will mature shortly, while the second group is made up of high-grade short-term bonds for which there is an active market and whose prices do not reflect much risk element which could cause them to fluctuate considerably. These earning assets, in spite of the name "secondary reserves," are actually loans and investments, however, and hence a more detailed description of them is postponed for chapters dealing with those subjects.

Summary

An understanding of the nature of reserves is basic to an analysis of the banking system because bank reserves are at the basis of virtually all problems of banking operation and policy. If it is remembered that a banker's reserves are simply his funds, which he can keep, lend, invest, or spend in the same way as any other person can dispose of his funds, misconceptions are less likely to arise. If it is further remembered that legal reserve requirements prevent banks from paying out the minimum legal reserves when required by demands for currency or adverse clearing balances, the primary function of reserves of setting a limit on the possible expansion of bank loans and deposits becomes clear. The banks' necessity to be in a liquid condition so that they can meet unusual needs for reserves is met normally more by the holding of secondary reserves, which can be converted into reserves, than by the continuous holding of primary reserves themselves.

VIII

BANK LOANS

IN spite of the greatly increased extent to which commercial banks have financed government operations in recent years, the normal function of these institutions has always been considered to be the financing of business operations. The commercial banks have not been considered the legitimate source for all of the funds of business enterprises, either. While the distinction between those loans that have been considered within the province of the commercial banking business and those that are outside has been breaking down during the last few decades, the distinction still remains. Our first task is to consider the different business requirements for funds and the qualifications of the commercial banks to meet them.

Financial Requirements

Capital: Fixed and Circulating

A modern business enterprise usually involves the use of considerable amounts of capital. Capital has been variously defined; generally, the definitions run either in terms of goods or their monetary values. *Capital goods* are all those physical things that are used in the process of production, in contrast to *consumer goods* that are

being used in consumption and are not producing more goods or services. A manufacturing enterprise requires capital goods in the form of buildings, equipment, materials, and supplies of many kinds. A railroad requires capital goods in the form of the roadbed, rolling stock, signals, stations, repair facilities, office equipment, and so on. These are goods that have been acquired and produced for the purpose of producing more wealth. The funds necessary to acquire these capital goods are the financial requirements of the enterprises. Businessmen say of a certain enterprise that it requires so much "capital." Such a statement refers to the values of the capital goods that must be acquired to operate on a given scale. Similarly, we use the expression of so many dollars being "invested in" the enterprise, also meaning the amount spent to acquire the capital goods.

Since the earliest writings in economics, a distinction has been drawn between the capital that is used up or consumed in the process of production and that part that is not. A locomotive, a building, or a machine continues to produce for a long time. Although it wears out eventually, it does not become embodied in the article or service being produced in the sense that materials are, nor is it consumed in the process like fuel or labor service. Furthermore, once a locomotive is built there is very little use for it except to haul trains. Other types of equipment are of limited use in varying degrees, but to some extent funds which have been spent in the acquisition of such goods have all been converted into "fixed" capital. Such capital is considered fixed because it does not change form during the process of production and lasts a long time. It can be operated at capacity or stand idle, but it keeps its existing form. The funds that were spent on such goods will presumably be returned out of the sale of the products of the fixed capital, rather than from the sale of the capital goods themselves. This has reference, of course, to the capital goods after they have been acquired by the user. A locomotive that has just been built by the Baldwin Locomotive Works is not yet fixed capital since it is intended for sale, but when it is acquired by a railroad company it becomes fixed capital. Such goods are produced only when the prospective users expect to earn more from them than they cost. If this fails to happen, some of the investment is lost because the cost cannot be recovered from the sale of either the output or the capital goods themselves.

Other types of goods are required in the production of goods and services which are used up in the process of production. If production ceases, they are not needed. To continue the illustration of the locomotive, the coal that it burns is not consumed if the locomotive is idle. Similarly, raw materials, parts, fasteners, packaging, short-lived tools, and the like are needed in proportion to current operations. One of the largest factors in such current expenses is labor. The business firm thus needs funds to buy and hire these things, but current operations themselves are expected to return the funds so that they are said to be "circulating" capital. Money spent for materials and labor is expected to be paid back out of the sale of what labor makes of the materials with the aid of the fixed capital. It is thus available to repeat the process again and again and to keep "circulating." Such funds may be thought of as following a circuit through cash, materials and the like, goods in process, inventory of finished goods; then sales, receivables, and cash again. Some funds are in each form at any moment.

Short, Intermediate, and Long-Term Funds

The need of a business enterprise for funds therefore depends partly on the type of business done and the type of capital employed. Long-term funds will be needed to spend on fixed capital. These are simply funds that are available for long-term investment. The owners are willing to have their funds "tied up" for relatively long periods in view of the possible earnings to be gained. Modern financial organizations, however, make it possible for the individual owners of such funds to make long-term loans and investments and still get their money back if necessary through the sale of the securities that are evidences of the debts or ownership. This is, of course, the primary function of the New York Stock Exchange and other securities markets. These markets do not eliminate the risk of investment but add to the liquidity of investments.

Short-term funds will be needed for the current operations of the enterprise. In order to start operations in the first place, someone must provide the funds for the purchase of materials and for the payment of labor. These funds may be available again shortly from the sale of products, but if operations are to continue they will again be needed. Operations may vary seasonally, so that more funds are

needed at certain times of the year for these purposes but are not needed throughout the whole year.

Short-term funds are typically considered those that are required for a year or less, usually not that long. The outstanding examples are the familiar 30-, 60-, and 90-day loans from banks to businesses. Long-term loans, on the other hand, are thought of as those that need not be repaid for five years or longer. In other words, they are used for purchase of assets that are not expected to "pay for themselves" over a period at least this long. This leaves a middle group of capital goods that are not circulating capital goods nor are they sufficiently fixed to be classified as fixed capital. The funds used to acquire these goods make up intermediate-term funds. Goods that qualify as fixed capital in that they are productive goods used in the production of still other goods, but which will wear out in from two to five years and must therefore be expected to pay for themselves in that period, fall in this group. Examples are fences on a farm, some types of heat-treating equipment, and the like.

Sources of Capital: Savings

If we consider capital to mean funds available for investment, that is, to be spent for capital goods, there is an obvious distinction between such funds and those spent for consumption goods. In other words, capital may be said to arise from saving because saving is refraining from consumption. Capital increases when people and business firms divert more income to the purchase of capital goods. To a large extent, then, a survey of the sources of capital is simply a survey of the channels through which such funds are made available to those who will purchase the capital goods.

The principal channels are the owners of businesses themselves, other direct investors, the security markets, and the money market. When an individual uses his savings to purchase a store or moving van or a farm, he is his own source of capital funds. The income from which he made the savings may have been quite independent of the prospective uses of the funds; the savings may have come, for example, from wages. Once the enterprise is in operation, the income from it may provide more savings. The profits of a business enterprise are often an important source of capital through the process of "plowing back" earnings. Corporate savings are usually an im-

portant portion of total savings, and the corporations which retain part of their earnings may purchase additional capital goods with these funds. In this way funds that might or might not have been saved by the stockholders out of their dividends are actually saved before the stockholders can make a choice between saving and consuming.

Sometimes capital funds are made available to business enterprises and other users by other parties. A direct example would be the loan of funds from one individual to another. The large-scale nature of modern enterprise and the widespread use of the corporation, however, make indirect channels highly important. People with funds to invest today often get these funds quite indirectly into the hands of those who will purchase capital goods. Corporations acquire funds through sale of stocks and bonds, evidencing in turn ownership capital and loan capital. The purchasers of these securities are likely to be organizations whose function is to invest the savings of others. For instance, a large part of the savings made in a period of time are made through the purchase of insurance policies and the acquisition of savings-bank deposits, savings deposits in commercial banks, building and loan shares, and the like. As these organizations get these funds, they purchase bonds and lend to builders and similar borrowers. The borrowers, in turn, spend the money for capital goods. In many cases, of course, the securities are purchased from old holders and not from issuing corporations, in which case funds may not actually be used to acquire capital goods. The seller of the securities may use the funds for consumption, the purchase of still other securities, or dozens of other uses.

In any event, the securities markets are an important source of capital especially for the larger enterprises. The securities markets are made up of investors, who may be individuals investing their own funds or institutions investing the funds of others; brokers, whose business it is to execute orders to buy or sell for others; dealers, who buy and sell securities for their own account; investment bankers, who put new issues on the market for corporate borrowers; the organized exchanges, where transactions in listed securities take place (the dealers providing the market for unlisted securities); and the borrowing organizations.

The securities markets are, generally speaking, a source of long-

term funds. They make possible the accumulation by corporations of funds from many savers to be used in acquiring fixed assets (primarily), and they also make possible the shifting of these securities to other owners when the original owners wish to do so. Short-term funds, on the other hand, come largely from the commercial banking system and the other elements of the so-called money market. A full description of the money market will follow in Chapter XVI. This market should be thought of, however, as being composed of all the

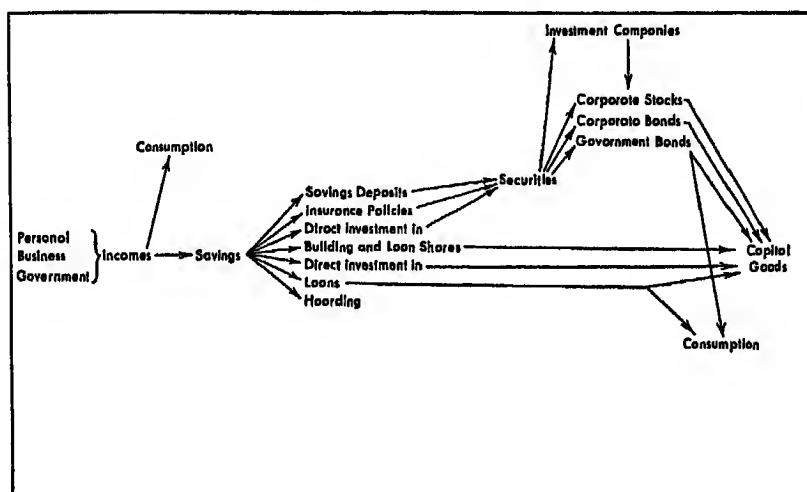


FIG. 4.—Principal Channels through which Savings Flow.

lenders of short-term funds, the institutions involved as middlemen, and the borrowers of short-term funds. Needless to say, business enterprises themselves may provide their own short-term funds, but typically at least a part has come from credit sources. The commercial banks have traditionally fitted into this picture as the holder, on the one hand, of the temporarily idle funds of the business community, and as the lender, on the other hand, to businesses in need of temporary funds. Actually, commercial banks have normally invested some of their depositors' funds in long-term bonds, and in recent years much larger proportions have been so invested.

There have been two reasons generally advanced for the argument that commercial banks should confine themselves to short-term loans. The first is that since the banks' liabilities are short-term, the assets

should be short-term too. This is the liquidity argument. The second argument revolves about a question to be discussed later, the effect of long- and short-term loans on prices.

The Interrelationship of Claims

The indirect ways in which savings are transmitted to the users of capital funds through the securities markets and money market lead to a complicated network of offsetting claims in a modern society. The assets of one person are the liabilities of others. When credit is involved, an asset and a liability are created simultaneously. A loan is an asset to the lender and replaces what he has lent, while to the borrower it is a debt or liability which is offset by whatever asset he acquires with the loan. A simplified diagram to illustrate this situation is made up of hypothetical balance sheets of an individual, a bank, and a business corporation. The individual considers his bank account as an asset, which, of course, it is; but to the bank it is a liability. Similarly, the mortgage on the individual's home is a liability to him, but it is also one of the bank's assets. In the same way, both the individual and the bank may own bonds of the business corporation. The various items on the balance sheets are identified by number as they appear on the different balance sheets in their different aspects.

INDIVIDUAL		BANK		BUSINESS CORPORATION	
<i>Assets</i>	<i>Liabilities</i>	<i>Assets</i>	<i>Liabilities</i>	<i>Assets</i>	<i>Liabilities</i>
Bank account ²	Mortgage ¹	Mortgage ¹	Deposits ²	Land	Current liabilities ³
Home	Current debts ³	Bonds ⁴	.....	Buildings	Bonds ⁴
Car	.....	Loans ³	Net worth:	Equipment	.....
Insurance policy	Net worth:		Capital	Materials	Net worth:
	Surplus		Surplus	Inventory	Cap. stock ⁵
Bonds ⁴				Receivables	Surplus ⁵
Stocks ⁵				Cash ²	

In addition to the individual's home, such other assets as his car and the business firm's real estate, equipment, and receivables may be pledged as security for loans. In such cases, the owner has an "equity" in these assets equal to the differences between their values and the amounts of the loans for which they are pledged.

Characteristics of Bank Loans

Aside from reserves, a bank has assets mainly in the form of loans or investments to counterbalance its liabilities to depositors. This section will deal with some of the principal aspects of the loan-making process, the desirable and undesirable features of loans from the point of view of the individual banker, and the characteristics of the principal types of bank loans.

Discounts

Generally speaking, the interest chargeable to the borrower at a bank is deducted from the face amount of the loan, an operation that gives rise to a *discount*. There is little to explain this particular action aside from business custom, except that the banker may be influenced by the fact that the discount process increases the actual interest yield slightly. If a borrower were to obtain \$100 and repay \$106, the interest would clearly be 6% of the principal. If the borrower received \$94 and repays \$100 the amount of interest is the same, but the rate becomes 6.38%. On a given total volume of loans the bank would thus realize a slightly larger income. Certain types of borrowing have customarily been done on a discount basis (for example, through commercial paper houses), and the use of the discount for direct loans may have stemmed historically from these similar loans.

The student should not conclude that the borrower obtains less than he wants to borrow because of the discount. Whatever the size of the loan desired, and agreed upon by the banker, a sum will be discounted for the number of days the loan is to run which will yield the amount agreed upon.¹

Regulation

Government regulation of bank loans has arisen primarily to augment the safety of the banks, but regulation also has been used in recent years to direct funds towards or away from specific activities. The most important restrictions are those found in the laws

¹ Assume the borrower wants \$100 and the rate is 6%. \$100 divided by .94 is \$106.38, the amount of the borrower's note if the loan were to run one year. The banker has interest and discount tables which show the discount per day at various rates. On small loans there is usually a minimum charge per month.

affecting the national banks and state members of the reserve system, because member banks dominate the banking system. A complete résumé of loan regulation will not be made here, but the general approach is indicated by the following summary.

Banks may not lend on the security of their own shares. This restriction stems from the era of state banks, when stockholders often borrowed from their banks to buy the banks' stocks. As a result, the banks had no real contribution of capital from the stockholders. To prevent loans with no economic basis, loans to a bank's own officers are restricted. Such loans have led to failures in the past. Similarly, loans to affiliated companies are restricted. Banks generally may not lend more than some maximum, such as 10% of their capital and surplus, to a single firm or individual. This rule is to prevent concentration of risk and the formation of banks for the sole purpose of lending to a particular interest. The volume of loans secured by the pledge of commodities or real estate is also limited. For many years real-estate loans were considered too nonliquid to be commercial bank assets. Partly to protect the banks and partly to control speculation, the volume of loans secured by stocks and bonds has been made subject to control by the Board of Governors. Primarily, however, the safety of loans depends more upon the banker's analysis and choice of customers than on what is legal or illegal; legality is not a guarantee of the desirability of a particular loan.

Direct Loans: Lines of Credit

. The most common, and also the simplest, is the direct loan, which usually follows after a bank has granted a customer a line of credit.² Before a bank can intelligently make a loan to a customer, it must satisfy itself of the likelihood that the loan will be repaid. Although a country banker can rely partially upon his general knowledge of local business conditions and businessmen, bankers generally must also study the details of the borrower's business to see whether he will be in a position to repay the loan at maturity, or whether, in the event of unforeseen difficulties, the loan will probably be paid even though repayment be necessarily postponed. This involves use of credit analysis which rests primarily upon a study of the borrower's profit

² The line of credit may be granted after the loan or several loans as a result of the borrower's dealings with the bank.

and loss statement for one or more recent periods and a recent balance sheet. To some extent it may cover his credit history, in order to ascertain whether he has a reputation for prompt payment or whether he is apt to be "slow."

The principal test applied to the borrower's balance sheet is the "current ratio." This is the ratio of current assets to current liabilities; the assets that will or can be turned into cash in a short time, such as inventory of salable goods, accounts receivable for goods already sold, raw materials, marketable investments and, of course, cash itself are compared with the obligations the firm will be called upon to meet in a short period, such as accounts due other businesses, other bank loans, taxes, and any long-term debts that may be about to mature. If the current assets are twice as great as the current liabilities (the ratio thus being two to one), even if the borrower realizes only half of what the current assets are supposedly worth, he will be able to meet his current liabilities as they mature. A rough rule of thumb in many businesses is that the current ratio should be not less than two to one, but the nature of the business and the state of the business owing to the season of the year must always be considered. The grant of a loan will change the ratio because it will add an equal amount to both the current assets and current liabilities, so the banker is interested principally in what the current ratio will be after the loan is granted. The figures below illustrate how a firm's current ratio might fluctuate seasonally.

BUSY SEASON				SLACK SEASON			
<i>Current Assets</i>		<i>Current Liabilities</i>		<i>Current Assets</i>		<i>Current Liabilities</i>	
Cash	\$10,000	Acc'ts		Cash	\$25,000	Acc'ts	
Receivables	15,000	payable	\$15,000	Receivables	5,000	payable	\$ 5,000
Materials	25,000	Bank		Materials	10,000	Bank	
Inventory	20,000	loans	30,000	Inventory	5,000	loans	10,000
	<u>\$70,000</u>		<u>\$45,000</u>		<u>\$45,000</u>		<u>\$15,000</u>
Current Ratio: 1.55-1				Current Ratio: 3-1			

From the profit and loss statement, the banker can determine whether the enterprise that wants the loan is profitable and whether it compares favorably with other enterprises in the same business. One test is to divide the sales by the inventory, to see how many times

the inventory is "turned over" during a year. If the figure is low, it may be because the business makes few sales for its investment in inventory, or because it has in its inventories items that are out of style or otherwise relatively unsalable. The banker will also be interested in seeing whether the credit sales are being paid for promptly or whether the enterprise has accounts receivable that may not be paid. The "operating ratio," which is sales divided by costs of operation, will show whether the firm is operating profitably or not; the lower the operating ratio the higher the profit ratio. These and other tests permit the banker to decide whether the borrower is a good credit risk. The current ratio, however, is the principal test in ordinary use as it yields an indication of the likelihood of repayment out of current assets.

Once having made the analysis, the banker dislikes to repeat it whenever the borrower may need another loan. Hence, he may grant the borrower a line of credit under which the borrower is free to borrow up to the limit of the "line" at any time. This agreement is not a contract which binds the banker but rather an understanding between the two parties. The bank will periodically re-examine the borrower's financial statements to see whether it is justified in continuing the arrangement.

Annual Cleanup

Normally, the banker will also insist that the borrower get completely free of debt at least once a year. This is known as the "annual cleanup" and serves to indicate that the borrower's position is such that he can get out of debt. In this sense it is a test of the liquidity of his loans as well as of the soundness of his business. Theoretically bank loans provide funds that are needed temporarily; each business presumably provides for itself from investors (stockholders or bondholders) the funds that it needs permanently. Because it might not pay to invest permanently the funds that are needed part of the time, the borrower resorts to bank credit. The annual cleanup should show that at the most slack period of the year the business does not need additional funds beyond its own. However, many firms meet the annual cleanup by borrowing from other banks with the result that the banking system is actually providing them with permanent capital. Hence, their ability to get out of debt is usually overstated

and in case of need the banker may find his customer cannot repay his debts at maturity or on demand.

TABLE 2
COMMERCIAL LOAN RATES, 1937-1945
 (average rates charged customers)

Year	New York City	7 Other Northern and Eastern Cities	11 Southern and Western Cities	Average, 19 Cities
1937	1.73%	2.88%	3.25%	2.59%
1939	2.07	2.87	3.51	2.78
1941	1.97	2.55	3.19	2.54
1943	2.30	2.80	2.13	2.72
1945 ¹	2.20	2.55	2.80	2.50

¹ June 30, 1945.

Source: *Federal Reserve Bulletin*, Oct., 1945, p. 1041.

Secured Loans

The line of credit loan is normally an unsecured loan, the banker relying upon his credit analysis for assurance that he will regain his funds. The unsecured loan is prevalent in this country because of the way in which most businesses are carried on. Sellers ordinarily ship their goods to buyers, bill them for the goods, and enter the sale on their books as an account receivable. They have no documents from the buyers as evidence of the debts which they could turn over to their banks as security for loans. They might, in fact, assign their accounts receivable, but this would entail the bankers' examining the credit standing of each of the debtors of the borrowers. If firms are unable to get accommodation from banks, they may be forced to borrow from other institutions specializing in granting credit upon the security of accounts receivable, but commercial banks do not ordinarily take the business. Such borrowers have to pay rates which cover the cost of the lenders.

It is possible, however, for certain types of businesses to give security for bank loans. Commodities which are nonperishable and are sold on organized exchanges are ideal as security. When such goods are stored in independent warehouses, the owners may pledge as security for bank loans the warehouse receipts, without which they cannot get the goods. If the loans are not repaid, the banks have

the legal right to take the goods. With a margin of the value of the goods above the amount of the loan, the bank is safe even though the value of the goods may fall moderately. Such loans are used to finance the storage of staple commodities like wool or cotton or wheat, the borrower getting funds to maintain his business while he holds these commodities for later use or sale. Similarly, goods in transit may be financed by loans secured by bills of lading, which are authorization for the shippers to turn over the goods. The borrower pledges the bill of lading and gets it back upon payment of his loan. If the loan is to run for a longer period, an arrangement may be made whereby he gets physical possession of the goods but legally holds them in trust for the bank. Any proceeds he obtains from the sale of the goods must be held for the account of the bank until the loan is satisfied. It should be remembered, however, that the bank expects the loan to be paid from the borrower's income. The security merely assures payment in unusual circumstances.

Collateral

Another type of secured loan is the collateral loan, or loan secured by stocks or bonds. Brokers who deal in securities are willing to lend their customers funds to enable them to buy a larger number of stocks than would otherwise be possible. The customer leaves the securities with the broker as collateral for the loan. The broker, in turn, reborrows the funds from a bank and deposits the securities with the bank as collateral. Normally these loans are extremely liquid because they are call loans; the bank may call the loan at any time. The broker must then (1) obtain the funds from another bank, (2) obtain the funds from the purchaser of the securities, or (3) sell the stocks, repay the loan, and turn over the remainder to the purchaser. If other banks take up the loan or if the market will absorb the securities, there is no difficulty. During rare stock market panics, however, it might be very difficult to obtain the necessary funds. Even these periods are guarded against by maintenance of the margin. To illustrate the use of margin as a safety factor: If the bank lends 50% of the total purchase price, a decline in the price of the securities will reduce the margin between the amount of the loan and the value of the securities, and banks normally demand a prompt reduction in the loan or increase in collateral. These loans were an

important factor in the stock market crash of 1929. Owing to a rapid rise in security prices again in 1945, such loans were prohibited in January, 1946.

Not only brokers' loans but all sorts of loans might be collateralized by stocks or bonds. A businessman might secure his loan in this way because otherwise the bank would be unwilling to lend, and the businessman might prefer to borrow rather than to sell his securities. A person owning securities might borrow for any purpose—say to buy a car—and secure the loan with stocks or bonds.

Indirect Loans

There are several other devices by which loans are made by banks to the business community through less direct channels. The loans discussed above are direct loans in the sense that the banker and the borrower make a simple arrangement whereby the banker makes funds available for a stated period to the borrower. Commercial paper, trade acceptances, and bankers' bills are more roundabout methods of accomplishing essentially the same result. These types of loans typically involve short-term commercial funds but since they raise certain questions of a general nature they are described more fully in Chapter XVI. They are mentioned here as important types of short-term loans which supplement the direct loans of many banks. It seems best, however, to treat them in connection with the general considerations of bank lending referred to above. Hence, this chapter concludes by reference to three other types of direct loans. Two of these differ from those described above in being long-term loans, which will receive further attention in later chapters in relation to specialized types of banks that deal in them as their main businesses. The three types are: the term loan, the real-estate loan, and the personal loan. The first and third are relatively new to commercial banks although for many years commercial banks have lent on mortgage security. Compensating balances will also be mentioned.

Term Loans

The *term loan* is a business loan, the proceeds of which are to be used for relatively fixed assets rather than working capital. (Working capital, or net working capital, means the excess of a firm's current assets over its current liabilities.) Term loans are not essentially

self-liquidating in nature because they are "tied up" in machinery, buildings, or some other fixed assets which will not be sold as such in the normal course of business as finished goods will be. However, so many relatively small businesses without access to the general bond market have needed funds for these purposes at times during which banks have found it difficult to place all of their free funds in traditional loans that ways have been worked out to make these loans acceptable to the commercial bank. The primary way of doing this is by amortization. Part of the loan is repaid at frequent intervals so that (1) the liquidity of the loan is increased because the bank regains part of its funds frequently and (2) the safety of the loan is increased because the principal is constantly decreasing.

Mortgage Loans

Similarly, amortization has been adapted to the real-estate loan. It has usually been felt that a bank's funds should not be lent for such purposes as constructing buildings because of the short-term nature of the bank's deposits. Real-estate loans tie up money for long periods and many are not self-liquidating. However, if a borrower repays each month a fixed sum which covers interest and a portion of principal, the bank gets its funds back gradually and the amount of the loan decreases during its life. This guards against a decline in the value of the real estate. Since the principal is decreasing, the fixed monthly payment serves to reduce the principal at an accelerating rate because the interest will be less each month, and therefore more of the payment will be left over to retire principal.

Personal Loans

Personal loans are another type of loan that commercial banks began to make in quantity as a result of the easy-money period of the 1930's during which they had to look around for profitable ways to lend money. Personal loans are generally small loans made to individuals for personal rather than business expenditure. In the past they have been taboo because they are not self-liquidating and ordinarily lack security. They are usually not self-liquidating because, financing consumption as they do, they do not directly increase the earning or debt-paying power of the borrower. Hence, the bank must consider the income of the individual, his other obligations, and

thus his ability to repay the loan. His credit standing in the community will be a strong factor in the decision to make or refuse the loan. Amortization is also useful in regard to these loans for the same reasons as given above.

TABLE 3
LOANS OF REPORTING BANKS IN 101 CITIES,
1930-1945
(millions of dollars)

June 30-	Total	Commer- cial, Agricul- tural, Indus- trial	Open Mkt. Paper	To Buy or Carry Securities		Real Estate	To Banks	Other
				Brokers and Dealers	Others			
1930	17,059	8,580 ¹		2,879	5,600			
1935	8,037	3,278 ²	332	1,055	2,111	1,149	112	
1940	8,435	4,399	309	395	467	1,202	38	1,625
1945	12,848	5,876 ³		2,534	1,869	1,047	95	1,427

¹ All loans except loans on securities.

² "All other loans" except those listed.

³ Includes open-market paper.

Sources *Banking and Monetary Statistics*, Table 48, and *Federal Reserve Bulletin*, Oct. 1945, p. 1036.

Compensating Balances

It has sometimes been contended that borrowers were required to borrow more than they wanted. The basis for this contention is the "compensating balance." This refers to the bank deposit that a borrowing customer of a bank is expected or required to maintain. Different banks may have different compensating balance requirements so it is impossible to state categorically what effect they may have upon the amounts of loans. If one bank requires that a borrower may not check out more than 80% of the proceeds of a loan, leaving the remainder as a compensating balance, the borrower clearly must borrow and pay interest upon a greater sum than he may use. In periods of high interest rates this device may have been used to circumvent usury laws, which provide maximum interest rates. A more common interpretation is that the borrower should at all times have a deposit which provides the banker with funds, the earnings from

which will compensate for the banker's willingness to lend when the need arises and for his analysis of the borrower's credit standing.

A business could seldom allow its cash to fall to zero, and even when it does have some cash it would be likely to borrow what it needs for a short period. A firm may have a \$20,000 deposit, but needing \$90,000 for certain immediate expenditures, it borrows \$80,000. The immediate result will be an increase in its deposit to \$100,000, but the deposit will fall again to \$10,000, in the absence of intervening revenues, as the \$90,000 is spent. As the firm collects revenues and deposits them, the deposit will rise until the loan is repaid. The repayment will probably be made by check drawn against the deposit. This will serve to cancel that much of the deposit and also to eliminate the loan from the assets of the bank. Clearly, the average deposit over the life of the loan was a large fraction of the loan. In this case, the requirement of an average compensating balance would not have caused the borrower to borrow any more than he did.

IX

INVESTMENTS

BANKS purchase bonds primarily for two reasons: first, to provide liquidity for the assets, and second, to acquire earnings when the demand for desirable loans is insufficient to absorb all the idle funds. The liquidity provided by the bond account is essentially that of salability, although if bonds are purchased not long before their maturity they will provide cash by being repaid. Also, if bonds do not have long to run until they mature, they cannot fluctuate much in market value from their face amount, and consequently the banker is assured that if he does sell them he will recover approximately what he paid for them.

Nature of Bonds

Bonds are the evidences of a debt, and a bondholder is thus a creditor. The legal distinction between corporate bondholders and stockholders is that the former are creditors of an enterprise while the latter are the owners. The bondholder therefore is in a position to receive interest for the use of his funds, while the return to the stockholder is determined by the profits of the enterprise after payment of interest. Bonds, or as they are commonly called in banking circles, investments, are thus a long-term variety of loans. Differences

other than the length of the loan may also exist particularly with regard to security, but fundamentally the extension of bank credit through bond purchases is the same as through granting loans.

The purchaser of a bond purchases the right to receive a stated amount of interest periodically (usually every six months) and the right to the return of his capital at the maturity of the bond. The private corporation usually sells bonds with interest coupons attached, and interest is payable upon the surrender of the coupons. In the case of registered bonds the interest is paid by check sent to the registered owner. In both these cases the interest is actually paid from time to time as it falls due, but in the case of discount bonds, which have become widely known through the United States Savings or War Bonds, the interest accumulates until the maturity of the bonds. The purchaser of such a bond purchases the right to receive the face value of the bond at maturity in exchange for the discounted value today. A common illustration is the savings bond sold for \$75 and redeemed ten years later for \$100.

Security

The general principle brought out in the preceding chapter that the lender expects to receive his interest and repayment from the income of the borrower is true of bonds as well as of short-term loans, but private borrowers such as railroads, utilities, and industrial companies commonly bolster their bonds by the pledge of security to insure repayment if necessary. Mortgage bonds of several varieties are those bonds secured by mortgages on the fixed assets of the corporation. Owing to the large number of bondholders of large corporations, a trustee (usually a bank) ordinarily holds the mortgage, collects and pays the interest, and presumably forecloses the property in case of default. Defaults usually lead to reorganization and exchange of new securities for old rather than to a complete liquidation of the assets and the retirement of outstanding securities. The other common type of property pledged for the security of bonds is still other securities. Bonds thus secured are collateral trust bonds and are commonly used when a holding company borrows by selling bonds. The holding company owns securities of various operating companies, which it can pledge as security.

Another form of secured obligation, technically not a bond but

closely related, is the equipment trust certificate in common use by railroads. In the use of these securities, a trustee owns equipment purchased with funds raised from investors in the certificates, and rents or leases the equipment to the railroad. The rentals are so calculated that they give the trustee funds to pay the required interest and to retire regularly some of the certificates. In this way the outstanding certificates are reduced as the value of the equipment depreciates. When they have all been retired, the trustee turns over the title to the equipment to the railroad.

Some bonds are unsecured and are simply claims to a fixed interest charge payable prior to any return to the stockholders. If such a bond is cumulative, the interest accumulates during years that it is not earned and must be paid when earned before dividends can be paid. Some unsecured bonds may be superior to some secured bonds, in those cases where the interest cost is a small part of the usual earnings of the company. Generally, however, these bonds are considered "weak"; a strong company could offer security and probably would prefer to do so in order to command a lower interest rate in the bond market.

Many other variations in the nature of bonds will be ignored or merely mentioned in this brief survey.¹ There are many devices to make specific bonds more attractive to purchasers, such as to make them convertible into stock at fixed ratios at the option of the investor. Various means employed to guarantee the repayment of the bonds include periodic retirement of part of the issue or the building up of a sinking fund to be used for retirement at maturity. These considerations, however, are not fundamental to our purpose of examining bond investments from the point of view of banking.

Government Bonds

Treasury policy is an important factor in the bond holdings of banks. Naturally, if there is a very small government debt, there are few government bonds for the banks to hold. Generally speaking, this situation existed until World War I. During the Civil War, large blocks of bonds were sold, but the government also financed by printing greenbacks. When greenbacks were deposited in banks,

¹ See H. G. Guthmann and H. E. Dougall, *Corporate Financial Policy*, New York, Prentice-Hall, 1944, for a more detailed description.

they increased the banks' reserves, and to the extent the banks bought bonds the purchases used up the reserves. Before World War I the government debt was approximately \$1,000,000,000; during the war it rose to about \$25,000,000,000. Many of these "Liberty Bonds" and the final "Victory Bond" issue were purchased by banks. The government retired its debt at the rate of about \$1,000,000,000 per year during the twenties, and during that decade there were many issues of industrial bonds. The public utility industry grew rapidly at that time and provided many more bonds for investors. At the same time many businesses became independent of the banks for working capital, raising funds by selling stocks. As a result, the banks purchased a larger volume of corporate bonds. The following table shows that commercial banks held \$8.1 billion of investments in 1920 and \$14.3 billion in 1930.

TABLE 4
TOTAL LOANS AND TOTAL INVESTMENTS,
ALL COMMERCIAL BANKS IN THE UNITED STATES,
1915-1945
(millions of dollars)

June 30~	Loans	Investments	Total
1915	13,519	3,954	17,473
1920	28,103	8,191	36,294
1925	29,560	11,673	41,233
1930	34,539	14,353	48,892
1935	14,909	19,679	34,588
1940	17,414	23,734	41,148
1945	23,670	90,840	114,510

Sources: *Banking and Monetary Statistics*, p. 19, and *Federal Reserve Bulletin*, Oct. 1945, p. 1032.

During the thirties, the government, under the New Deal, adopted a policy of incurring deficits and increased by several billion dollars the debt which President Hoover had unwillingly seen increase towards the end of his administration. This borrowed money the government spent on direct relief and on construction projects designed to give people work and to stimulate demand for the products of other industries. Preparation for and engagement in World War II

pushed the government debt to unheard of heights, close to \$280 billion by the end of 1945. A very large proportion of these bonds, about \$85 billion, was taken by the commercial banks. Many industries found it relatively unnecessary to borrow during the war as in normal times, and the role of the banks became pretty much that of lenders to the government.

TABLE 5

CLASSIFICATION OF INVESTMENTS OF
ALL MEMBER BANKS, DEC. 31, 1941
(millions of dollars)

Total investments	25,500
U.S. government obligations	15,707
Bills	971
Notes	3,007
Bonds	11,727
U.S. guaranteed obligations	3,832
States and political subdivisions	3,090
Other domestic securities	2,733
Gov't agencies, not g'teed	557
Railroads	699
Utilities	421
Other	665
Fed. Res. Bank stock	142
Other stocks	250
Foreign securities	138
Total securities maturing in five years or less	10,861

Source: *Banking and Monetary Statistics*, p 77. Rounding figures causes subtotals not to check exactly.

During World War II, a variety of bonds was sold by the Treasury, designed to tap as many sources of funds as possible. The prewar savings bonds were converted to war bonds. They continued to sell for three-fourths of maturity value, being redeemable with reduced interest before maturity, and not negotiable. They could be purchased only by individuals and hence were not bank investments. Series F and G bonds were similar to these Series E bonds in that they could not be purchased by commercial banks, but were available

to all other buyers. They matured in twelve years instead of ten. Series F were issued at a discount like the Series E, with a rate amounting to 2.53%, while the Series G paid 2.5% semiannually by Treasury check. Other Treasury bonds were sold to all investors, including banks, with maturities ranging from ten years upwards and at interest rates between 2% and 2½%. However, it was Treasury policy to place as many long-term bonds in nonbank hands as possible in order to minimize the extension of bank credit. The majority of bank holdings were therefore short-term issues—notes, bills, and certificates. As these have normally and traditionally been used by commercial banks as secondary reserves, they are discussed in that connection in the next chapter.

Investments and Deposits

It is apparent from previous chapters that these huge investments in government bonds served to increase bank deposits by expansion of bank credit. The banks began the war period with excess reserves much larger than had ever been considered likely a decade before. As they turned this money over to the government in exchange for bonds, the government either took it in the form of deposits in those banks or took over the reserve balances of the banks at the reserve banks. In either case, the Treasury spent the funds by disbursing checks, which again were deposited in the banks, building up the recipient banks' reserves. The banks again invested these reserves in government bonds, the government spent the money, creditors of the government got bank deposits, and so the circle repeated itself. Demand deposits of all banks were \$35,000,000,000 in 1940 and \$90,000,000,000 in 1945. In 1933, at the depth of the depression, they were only \$15,000,000,000.

Bond Prices

Two factors influence the price at which bonds sell at any particular moment, (1) the likelihood that the debtor corporation or government will meet the interest payments and redeem the bonds when due, and (2) the rate of interest paid by the bond. Naturally, a bond which is in default or is likely to be, owing to the lack of income of the borrower, is not worth as much to investors as is a bond on which the interest is paid regularly. This is the risk element in

bonds, making some high grade and others of lesser grade. The two important sources of bonds are corporations (including railroad, industrial, and public utility companies) and government—state, local, Federal, and foreign. Consequently the main determinants of the quality of a bond are, for private debtors, business conditions and the relative “load” of debt the corporation in question has, compared to its present and prospective income. For public debtors, the risk is that the government involved may have insufficient tax revenues to “service” its debt or that, for lack of funds or other reasons, it may repudiate its debts. Business corporations, of course, do fail occasionally, so losses do occur in the bond account. While it is customary for corporations to secure their bonds, usually by a mortgage on fixed assets or by a pledge of other securities owned, so that in case of default bondholders are protected, the protection is not always adequate. State and local governments have, at times, failed to pay their debts, and investors have lost funds in these investments too. Governments today usually do not offer security for their bonds; the investor generally relies upon the tax power.

The interest rate called for by a bond is important because it determines the income from the bond. A \$1,000 bond carrying a 4% rate obligates the debtor to pay the bondholder \$40 a year in interest, whereas one carrying a 6% rate yields \$60 a year. The rate of interest depends upon financial conditions at the time the bond was issued and upon the credit standing of the issuer. When idle funds are scarce and there is a great demand for loans, lenders can get high rates, whereas when there is plenty of money seeking investment, lenders cannot charge so much. Also, a corporation with a very high credit rating, one whose bonds are considered most unlikely ever to be in default, will be able to sell its bonds even though they do not carry as high a rate as do bonds of other issuers. The Federal government, for example, can pay a lower rate of interest because investors need not fear defaults by the government.

At any given time there are bonds in the hands of investors, some issued at one time, others at different times in the past; these will run until different dates in the future. Some short-term bonds were issued a few years ago, and will mature in a few years, whereas some bonds are old and may not mature until, say, the year 2,000 or later. These bonds carry the interest rates that had to be granted when

they were issued. Assuming that two bonds are deemed to be of equal risk, a 6% bond would clearly be worth more than a 4% bond. If the bonds were perpetual, that is, if they would never be redeemed but would go on earning interest indefinitely, the first would be worth 50% more than the second. Compared with new bonds issued today at 4% interest, selling at par, the 6% bond would sell for 50% above par. If it were issued for \$1,000, the 6% bond would today be worth \$1,500. An investor could get the same income from \$3,000 invested in two of these bonds as by investing \$3,000 either in three new \$1,000 bonds paying 4%, or three of the old 4% bonds. If, on the other hand, the rate of interest today were, let us say, 8%, that being the rate that new borrowers have to agree to pay in order to sell their bonds at par, then the old 4% bonds would be worth only \$500, because it would take two of them to yield the same income as one new \$1,000 bond. The 6% bond would be worth \$750.

However, these values would depend upon whether the bonds have a perpetual life. If they will not pay interest forever, but will some day be paid off, investors must remember that a bond that costs more than par today will be redeemed at maturity for less than they paid for it. This will have the effect of eliminating some of the interest they receive. Suppose that a 5% bond is selling at 110 (meaning 10% above par or, if a \$1,000 bond, at \$1,100) and that it matures in 10 years. If the bond is held until maturity, the investor will lose the extra \$100 paid for it, so he must plan to amortize this premium over the remaining life of the bond. This could be done by retaining \$10 of the interest each year as capital, so that at maturity the investor will have \$100 to add to the \$1,000 redemption. This will reduce his actual interest from \$50 to \$40. In this example, the interest rate on the bond is 25% higher than the actual rate after amortization (5:4), but at the same time the price of the bond is only 10% higher than par. It is in this modified way that all the various bond issues tend to sell for prices "in line" with each other, considering also the different degrees of risk involved in them.

This leads us to the conclusion that when bankers buy bonds primarily to add liquidity to their assets they tend to buy either short-term bonds or long-term bonds that are nearing maturity, which makes them short-term. As these bonds presumably will be redeemed

at par soon, they cannot fluctuate much in price from par. To express it another way, a decline in market rates of interest cannot raise the market values of these bonds much, nor can a rise in interest rates cause these bonds to fall much in price. Hence, the bonds should be readily salable at about the price paid for them.

Bank Purchases

During periods of business depression, like most of the 1930's, banks usually are not able to lend all of their lendable funds to businessmen-borrowers. They turn to the bond market for a place to put their money to work. When all of the banks do this at more or less the same time there is a tendency towards a bidding up of prices of desirable bonds, with a concomitant decline in yields from the bonds. In this way comes the recovery in the bond market from the depression prices that may have prevailed shortly before. One result of this decline in interest rates is the greater attraction of borrowing to business corporations. Whereas during the depression they might have been faced with a 6% rate if they had wished to borrow by selling bonds, now the prices of bonds may have gone up sufficiently to allow bonds to be floated with 4% rates. This is one of the forces tending to business recovery.

This sequence of events sometimes has another aspect for the banks. Since they have been buying bonds at rising prices because of lack of lending activities, now, when their customers again request loans, they may have to sell bonds in order to get funds to lend. This concerted selling is likely to depress bond prices, so it is often said that banks buy bonds on a rising market and sell on a falling one, and therefore take losses. Banks have thus been accused of being poor bond buyers. However, the effect on any individual bank depends entirely upon its own purchases, and it may well gain enough on the upswing to offset what it may lose on the downswing.

Importance of Quality

The quality of the bonds a bank buys determines to a large extent the likelihood that the bank may ever become insolvent. There is always a temptation to purchase second-grade bonds because of the higher interest yield. If a bank, having a large proportion of such bonds, is ever called upon by unusual withdrawals to liquidate a

large part of its bonds at the same time that bond prices are low, it will be unable to recover its costs of the bonds and may not be able to meet its depositors' demands. This illustrates the fundamental nature of a bank as an institution whose liabilities are fixed dollar obligations, and whose assets may fluctuate in dollar values. A dollar deposited in a bank is a dollar the bank owes. A dollar invested in a bond becomes a security that at one time may be sold for \$1.20, at another for fifty cents. Obviously, the fifty cents will not repay the depositor's dollar.

When withdrawals of cash are widespread, as they were in 1932 when a general fear of bank failures led to a great deal of hoarding, a great many banks may need to sell bonds at the same time. Since they all want to sell, none wants to buy, and prices may drop very low. Furthermore, the banks probably decide to sell their poorer bonds first and to hold on to their better ones, with the result that the prices of the second-grade bonds fall drastically. If the situation goes very far, many banks become insolvent; their assets are not sufficient at current values to pay back the liabilities. This is illustrated by the two following hypothetical balance sheets, which show the values attaching to the assets prior to the wave of liquidation and the realization of the liquidation.

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$100	Demand deposits	\$500
Loans	500	Time deposits	500
Investments	600	Capital & surplus	200
	<u>\$1,200</u>		<u>\$1,200</u>

We assume that \$300 of the demand deposits are withdrawn for cash, as are \$100 of the time deposits. This \$400 is much more than the available reserves, so we further assume a reduction of loans of \$100 and the sale of some of the securities. These securities have been carried on the books at \$400 but bring only \$250 when sold. The results will be:

<i>Assets</i>		<i>Liabilities</i>	
Reserves	\$ 50	Demand deposits	\$200
Loans	400	Time deposits	400
Investments	200	Capital & surplus	50
	<u>\$650</u>		<u>\$650</u>

That is, the \$400 came from reserves (\$50), loans (\$100), and investments (\$250), but investments that cost \$400 had to be sold to raise the \$250. The result is that the surplus of the bank is gone, as well as half of the stockholders' investment (assuming capital was \$100). Furthermore, the bank is weak against further withdrawals, since we do not know how much the remaining investments might bring if sold. Today the Federal reserve banks would take action designed to prevent such a development, but this hypothetical example does indicate the manner in which bank failures may result from unwise investments, or, for that matter, from outside influences that make ordinarily sound investments look unwise.

The way in which market values of bonds may fluctuate widely as a result of the risk element is brought out in the comparison of four bonds picked at random to show the contrast between their low and high prices during the period 1929-1935. The low point for one of these bonds in this period was 43.1% of its high point, while for another it was 88.5%. The forced sale of the Jones and Laughlin bond at its low price would have been much less disastrous to a bank than the sale of the Minneapolis, St. Paul and St. Marie Railroad bond under the same circumstances.

	<i>High</i>	<i>Low</i>	<i>% Low of High</i>
Minn., St. Paul and St. Marie RR 4's, '91	87	37½	43.1%
Illinois Bell Tel. 2¾'s, '81	105½	90¾	86.0
Jones and Laughlin 3¼'s, '61	104½	92½	88.5
N.Y. Short Line RR 4's, '57	110½	70	63.3

Regulation of Investments

As in other banking operations, the investments of a bank are subject to regulation by the appropriate state or Federal authorities. State laws are, as a general rule, more lenient than the laws and regulations affecting national and state member banks of the Federal Reserve System. The original National Banking Act apparently implied that national banks could invest only in government bonds, which were eligible as security for their note issues, since no

other reference to bond investments was made in the act. However, the Comptroller of the Currency interpreted the reference to dealing in "evidences of debt" to include buying and selling bonds. National banks have always held bonds, although it is only in fairly recent years that investments have approached or surpassed loans in importance. Investment in stocks was early barred by the courts, since stocks are not evidences of debt but equity securities which are considered too speculative for the investment of deposited funds. The McFadden Act of 1927 overhauled the national banking laws in several respects and clarified the right of national banks to deal in bonds which were classified as "investment securities" by the Comptroller of the Currency. The emergency and reform legislation of 1933 and 1935 more specifically restricted the types of securities that should be eligible for bank ownership and also barred the banks from participating in the investment banking business. That is, commercial banks cannot underwrite or distribute securities but may merely buy or sell them for their own account. They may, however, buy or sell securities for their customers.

The regulations of the Comptroller of the Currency that have supplemented this legislation are attempts to lay down general rules governing the definition of investment securities. They are, of course, aimed at eliminating as far as possible speculative issues. Rather than rating individual securities, the Comptroller's regulations rely upon the ratings assigned by the four leading rating services. At least two of these services must agree that an issue is not speculative before it is eligible for bank investment. If a specific issue is not rated by these services, the bank wishing to buy it may nevertheless succeed in convincing the examiners that it is an investment security. The regulations specify that the security must be salable under ordinary circumstances at "fair value." This requires a relatively high degree of marketability, and public distribution is required of eligible securities unless other considerations make it unnecessary. If other issues of the same borrower are sufficiently marketable to protect the market for the issue in question, that is sufficient. Also, in the case of small issuers who do not command ready marketability for their securities, banks may purchase their bonds if they can show that for such bonds of less than ten years maturity the issuer can meet the

interest charges and amortize at least three-fourths of the debt by maturity.

Banks are forbidden to purchase securities that are in default either in principal or interest payments because these securities are obviously speculative. Similarly, they are barred from purchasing bonds that are convertible into stock at the option of the issuer. Bonds that have a conversion privilege that may be exercised by the holder may be purchased but not at prices above the value of the security as an investment.² There is a general rule that securities that are distinctly or predominantly speculative may not be purchased. This would rule out bonds selling at such low prices that their yields are considerably higher than the yields obtainable on high-grade bonds. The yield on the safest investments available is considered the basic yield, and there is a rule of thumb in the investment world that securities yielding twice the basic yield or more are speculative.

Finally, if a bank purchases a bond at a price above par, the bank must provide regular amortization of the premium, and this amortization is a prior charge against the gross earnings of the bank. If the bond may be called at a price lower than that paid by the bank, it cannot carry the bond on its books at a price higher than the call price.

² When stock prices are high, convertible bonds may rise above their value as bonds because of the conversion privilege, since the ownership of the bond gives the owner the right to trade it for stock at a fixed price which may be below the current or prospective market price. The conversion privilege has a value of its own, therefore, which is a speculative value and is not considered appropriate to a bank purchase since banks are not allowed to own or deal in stocks.

X

THE PORTFOLIO

THE two preceding chapters have taken up the two principal categories of earning assets of a bank: loans and discounts, and investments. It now remains to consider certain over-all problems of the banker in determining the proportions of the different types of assets to hold. This will require a description of certain types of loans not already discussed.

The three principal *desiderata* of a bank's assets are safety, liquidity, and earnings. The banker naturally desires to obtain earnings, but at the same time cannot lose sight of the necessity of protecting the funds of the bank in order to be able to meet the demands of depositors. Hence, there is a constant conflict between earnings and safety, the safest investments naturally commanding the lowest yields. At the same time, safety alone is not enough because liabilities of a bank are obligations to pay on demand or on short notice, so the banker must also bear in mind the possible necessity of converting earning assets into means of payment. An individual loan or investment can hardly provide to the desired extent all three characteristics of safety, liquidity, and income. The banker therefore attempts to choose his loans and investments in such a way that the aggregate

satisfies these requirements as far as possible. The result is his portfolio policy.

Liquidity and Safety

A liquid loan or investment is one that will, or can, be turned into cash quickly and easily. It would appear that such an asset must also be safe, but this is not necessarily true. A liquid loan is likely to be safe, but a safe loan, on the other hand, need not be liquid. The liquidity of a loan or investment depends upon the market primarily, whereas the safety of a loan or investment depends primarily upon the borrower. A five-year loan may be quite safe in the sense that it will almost certainly be paid in full when due, but it may lack liquidity since the banker may not be able to exchange it for cash quickly. A very speculative investment, such as a defaulted bond, might be liquid at least temporarily if there were an active market for the particular issue.

Liquidity and Shiftability

Liquid assets may be liquid because they are self-liquidating or because they are readily shiftable. A loan is said to be *self-liquidating* if the proceeds of the loan are used by the borrower in such a way that his income will be increased and thus permit him to repay the loan. For many years writers on banking theory contended that these were the only loans commercial banks should make, but in recent years practice has diverged so far from theory that new principles have had to be developed. Nevertheless, the banker must always be aware of the possibility that he may be called upon to pay out a large fraction of his deposits quickly, and unless he has loans which will be repaid in a short time or assets which he can sell to other institutions without serious loss, he will be forced to dispose of long-term assets for whatever price he can get. If he is unable to raise enough funds in this way to meet his obligations, he is discovered to be insolvent, and under the banking laws will probably have to liquidate the rest of the assets and return the depositors' money. Some of the assets were acquired with funds contributed by the stockholders, and if the realization is not sufficient to repay their investment, they simply lose whatever is still lacking.

Shiftability is the term applied to assets that are liquid because

they are easily salable; that is, they may be shifted to other lenders for cash so that the result to the original lender is the same as if the obligation had been repaid. The result is the same only if the price received for the asset is close to the amount of the loan (or cost of the investment). An asset is truly shiftable only if it can be sold quickly without appreciable loss. Short-term high-grade bonds that have active markets on organized exchanges would thus qualify.

Relation to the Banking Principle

The ever-present distinction between statements that are true of the individual bank and those that are true of the banking system applies to the nature of liquidity. Liquid loans and investments lose their apparent liquidity at times when the banking system as a whole attempts to realize on their liquidity. This fact has created no little confusion in the development of banking theory and the establishment of policies to be applied to the banking system.

In the eighteenth and nineteenth centuries there grew up in England the belief that banks should confine their lending operations to business borrowers who needed funds for short periods for trade or business purposes. This belief was based upon the idea that since the banks' obligations were payable upon demand or relatively short notice, they should hold only such assets as would constantly provide the banks with the funds with which to meet their liabilities. An important aspect of this "Banking Principle" which does not concern us at this point was the further belief that since such loans occurred only when production required them, they would not lead to a more rapid growth of money than of things to be bought and sold for money.¹ In other words, it was held that there was an identity between what was sound practice for the individual bank, in protecting itself against loss of reserves, and what was sound policy for the banking system. Upon this supposition, banks would best protect their own interests and those of the country as well by refraining from making long-term loans and investments. Long-term loans would provide funds that would tend to cause inflation since they would not be repaid to the banks for long periods, and during those periods they would circulate in the purchase of goods. At the

¹ See Chapter XXXIII.

same time, the banks' funds would presumably be "tied up" in case of the need to meet withdrawals.

In spite of the widespread acceptance of the Banking Principle, the banks did hold bond investments, and more important perhaps, typically considered the bonds to be their more truly liquid assets. The reason for this, of course, was the fact that the highly organized securities markets in England made it possible for the individual banker to sell high-grade bonds quickly at prices close to those being currently quoted.

In the United States the breach of the theory was even greater. Until fairly recent times, the United States was a country where the supply of money and loans always appeared to be inadequate for the opportunities for investment. The national income did not provide the population with the requisite amount of savings to meet all demands for capital funds, and businesses naturally turned to banks for loans of all kinds. Within the limits of various state and Federal laws, bankers balanced the requirements of liquidity, safety, and earnings and often made loans that were not within the precepts of the Banking Principle. Furthermore, the typical commercial loan to provide working capital for seasonal needs often became in practice a long-term loan because of the prevalence of renewing rather than repaying such loans. The annual cleanup, referred to in the chapter on loans, was not widely enforced, since it was realized that the borrower would likely repay by obtaining loans elsewhere. Competition between the thousands of unit banks in the country, or more precisely, the local competition between the several banks in most communities also led to more leniency in this regard on the part of the bankers. Another contributing factor was the success of many businesses in overcoming the seasonal nature of their enterprises; a more steady volume of working capital thereby was required throughout the year.

In the United States, also, the existence of time deposits has tended to obscure the commercial nature of the banking system. Most of the unit banks have been combination banks, doing the work of commercial and savings banks, and often combining other functions, such as those of trustees. Time deposits have led to the investment of these funds in long-term mortgages and securities on the grounds

that the nature of these liabilities did not require liquidity in the corresponding assets. Perhaps of equal importance was the continual long-term growth of deposits which overshadowed the possibility of occasional heavy withdrawals. Regardless of all of the various factors leading to the actual practice, it has long been customary for banks to hold many other assets than short-term commercial self-liquidating loans.

Liquidity in Emergencies

For a long time, adherents of the Banking Principle attacked the practice of holding shiftable assets on the ground that in times of general liquidation and banking panics these assets lost their shiftable ability. If all individual bankers are holding government bonds, let us say, in order to provide their desired degrees of liquidity, it is obvious that they cannot all sell them at the same time—at least not to each other. As a matter of fact, the periods of banking panics have been periods when all banks attempted to build up their reserves by selling securities but failed to do so since they were all on the same side of the market. If other investors were willing to buy at such a time, it is conceivable that the banks might be able to unload their bond portfolios onto other investors, but this has generally not been the case since investors are not so likely to buy on a falling market.

The call loan, to be described below, usually came in for similar criticism at such times because it too lost its liquidity when securities were being liquidated at falling prices. As security prices fell lower and lower, those who had purchased securities on margin with bank funds found it more and more difficult to obtain the funds demanded by the banks by selling the securities.

At such times more emphasis would be placed upon the self-liquidating nature of commercial loans. Since a commercial loan would be used to produce goods for sale, the sale of the goods would supposedly provide the borrower with funds to repay the loan. However, it has become apparent that in time of crisis there is virtually no liquidity within the banking system for any type of loans. This is true because even with respect to commercial loans the sale of goods depends upon the constant functioning of the banking system and the constant maintenance of a volume of loans. Without these loans

the business community does not have funds with which to maintain the business activity that provides the liquidity of the self-liquidating loan. If a mill has produced textiles, and paid wages or bought cotton with the proceeds of a bank loan, it might still be unable to sell the textiles if ordinary buyers are unable to borrow their usual funds from their banks. It is still more unlikely if banks in general are demanding repayment of existing loans. It is for this reason, as well as those mentioned above, that the banker typically does not consider his short-term local loans the really liquid loans in his portfolio.

The Role of a Central Bank

The reason for loss of liquidity for both self-liquidating and shiftable types of assets is the drying up of sources of funds within the banking system. When banks are making loans, funds are available, goods are sold, securities traded. When an individual bank, in these circumstances, finds it necessary to liquidate assets it has no difficulty in doing so, as other banks or other investors take up the investments or loans that the individual bank is getting rid of. When most banks are restricting their loans and investments, however, because they individually fear loss of deposits, then each individual bank is unable to require its customers to pay their loans or to sell securities in the open markets.

If there were a source of funds outside the commercial banking system, the banks could shift assets to this source and not be required to restrict their lending operations in the first place. This is the function performed by the typical central bank. When there is a central bank which can lend to commercial banks as they need reserves, the commercial banks are not thrown into the paradox of trying to obtain reserves from each other by selling to each other securities which none of them wants to buy at the time. Similarly, if the central bank happens to operate, as it does in some countries, by making loans to the business community, businesses can turn at such times to the central bank to get funds to carry on their activities. Thus it is possible to preserve the liquidity of the self-liquidating loans. The older central banks, such as the Bank of England, gradually grew into this function whereas the Federal Reserve System was established in this country largely to meet the need for this sort of an institution.

Secondary Reserves

As was mentioned briefly in the chapter on reserves, the earning assets that a banker acquires with an eye primarily on liquidity are his secondary reserves. It should always be borne in mind that the term *secondary reserves* does not imply that such earning assets are actually reserves, but rather that they are particular loans and investments with a high degree of liquidity which makes possible that they be converted into reserves if necessary. The relationship of these assets to this group of chapters is that while they are actually loans and investments, they have special characteristics that throw them into a consideration of portfolio policy in general.

Secondary Reserve Assets

Secondary reserves have been defined as "loans that may be readily called or sold in the open market without involving customer relations, and securities that may be sold without risk of material loss of principal. In general, such assets include most of the following: broker's loans, bankers' acceptances, open-market commercial paper, and short-term high-grade securities. . . ." ² Only those loans that can be called or shifted without creating a problem of customer relations are included in the definition. This excludes the whole array of ordinary loans to customers because of the likelihood that in the ordinary course of business the banker is unable to request payment prior to maturity and because such loans are often renewed at maturity. To request payment of a loan prior to maturity would often be considered a sign of weakness and in any event many customers would not be able to retire their loans before maturity. Hence, only those loans that can be called as a normal event or sold in an open market are included. This definition makes the criteria for secondary reserves impersonal and objective.

Brokers' Loans

Brokers' loans have already been described as one type of secured loan. Their significance as secondary reserves arises from the fact that they are callable. A bank in a money center where there is an organized security exchange, like the New York Stock Exchange,

² *Federal Reserve Bulletin*, 1939, p. 262.

may put idle funds to work by lending them from day to day to brokers. Unless time loans are made, it is understood that the bank may decline to renew the loan on any day. If the broker shifts his borrowing to another bank, as he normally can do without difficulty, the first bank receives its funds promptly. In any event, the loan is collateralized with marketable securities so that if the loan is not paid promptly when called the securities may be sold by the bank. For these reasons brokers' loans have long been used as a secondary reserve, as they appear to the banker to have a very high degree of liquidity. During the speculative period of 1927-1929 the volume of brokers' loans grew so large that it is questionable whether they should be considered as having been secondary reserves primarily or earning assets. Certainly the high interest rates then prevailing on brokers' loans as much as their traditional liquidity must have influenced many bankers to make such loans.

As has been pointed out before, brokers' loans lose their liquidity in periods of stock market panic owing to the rapid decline in security prices and the inability of borrowers to acquire funds for repayment. When the banks sell the collateral they merely add to the decline in values. In 1929 the Federal Reserve Bank of New York took over other assets of the banks in New York so that they could in turn take over the brokers' loans of "outside" banks that were trying to unload during the stock market crash. This action was taken in order to cushion the liquidation; if the New York banks had been unable or unwilling to take over these brokers' loans, the liquidation would have been that much heavier.

Bankers' Acceptances

Bankers' acceptances or bills are commonly used in international trade transactions, under which heading they will be examined more thoroughly later. They rank high on the list of secondary reserves because they are highly liquid, since they are both self-liquidating and shiftable in the bill market, and they are also salable to the Federal reserve banks.

A banker's acceptance arises in a transaction wherein a seller is unwilling to ship goods on credit to a buyer, but is willing to do so if he becomes the creditor of a bank rather than of the buyer. That is, while he might be unwilling to draw a draft against the buyer for

payment he would be willing to ship the goods if he could draw a draft against the buyer's bank. The buyer therefore arranges with his bank to permit the seller to draw drafts under certain circumstances against it, and sends the bank's "letter of credit" to the seller, so informing him. The buyer agrees as part of the arrangement to reimburse his bank. The seller can now ship his goods to the buyer, draw a draft against the latter's bank, and discount the draft at his own bank in order to get immediate payment if he wants it. Otherwise, he sends the draft to the drawee bank for acceptance and after the bank stamps it "accepted" and returns it, he holds it until maturity when he collects from the accepting bank.

If the seller discounts the draft, his bank also gets the draft accepted, after which it is known as a bill. Then the bank has the choice of holding the bill as part of its secondary reserves or of recouping the funds it has granted the seller by selling the bill in the open market. If the bank holds the bill until it collects at maturity from the accepting bank it earns the discount representing the difference between the face amount of the bill and the amount granted the seller. The safety of the bill is virtually unquestioned, as the bill is the obligation of the accepting bank and must be paid by it whether the buyer of the goods reimburses the bank or not. Thus the holding bank is not primarily concerned in the self-liquidating nature of the bill, a characteristic which is of more importance to the accepting bank as assurance that it will be reimbursed by the buyer of the goods.

The Federal reserve banks, almost since their establishment, have attempted to enlarge the bill market and the use of bills in the United States, and as part of this policy the reserve banks have always stood ready to purchase bills that banks might want to sell. Usually these sales are repurchase agreements, whereby the bank sells the bill to the reserve bank under an agreement to repurchase within 15 days. Sometimes the sale might be outright. The bank holding bills as secondary reserves can thus be assured of obtaining primary reserves for them and at low cost, as the discount (buying) rate charged by the reserve banks has been moderate as part of the policy of encouraging banks to use bills. Except during the immediate prewar years of unusual excess reserves, the reserve banks nearly

always had a portfolio of bankers' bills that they had acquired from banks which had held them as secondary reserves.

Open-Market Commercial Paper

Another type of loan commonly employed as secondary reserve is open-market commercial paper. In a sense, all of the loans made by a bank to its business customers are commercial paper. Open-market paper, however, is the loans that are dealt in by commercial paper houses through the commercial paper market.

Relatively large business firms may find it difficult to obtain the large sums they may need seasonally or occasionally from a single bank with which they might deal regularly. They may then have recourse to commercial paper houses, which are dealers in commercial loans. The borrowing firm makes out notes for round amounts, like \$5,000, adding up to the sum desired. After careful investigation, to protect their own reputations, the commercial paper houses purchase these notes at a discount. They then "retail" them to commercial banks that are looking for prime loans, without guaranteeing them, however. These banks buy them at whatever discount rate is prevailing. The profit, commonly called a *commission*, to the commercial paper house comes from the spread between its buying price (rate) and its selling price (rate). Years ago these houses did not buy the paper for resale, but acted as brokers; that is, they found banks to buy directly from the borrower, for which function they did earn a commission.

This type of paper is very desirable for banks, and so the discount rate tends to be less than that on direct loans. Hence the borrower may pay less interest, including the profit of the commercial paper house, than would be charged by a bank lending directly. The paper is very desirable because of the impersonal nature of the transaction as well as the high credit standing of the borrower. Such debtors never ask for extension of these loans, and indeed, may be willing to take up the paper before maturity. Consequently, commercial paper of this type is liquid as well as safe.

Like bankers' bills, commercial paper may be eligible for Federal reserve bank accommodation. When it coincides with the 90-day limit on maturities, it is probably eligible as to the purpose for which

the funds were raised, and may be discounted at a Federal reserve bank in order to obtain primary reserves.

Bonds

Until recent years, banks held high-grade bonds primarily as secondary reserves, but the developments since 1930 have led to bond portfolios far larger than would be required for this purpose. Deficit financing and lack of sufficient demand for commercial loans led to a considerable increase in bank holdings of government bonds during the 1930's, and, of course, the war led to a further phenomenal increase.

Government bonds have been considered excellent secondary reserves because of their high quality, which has meant that they fluctuated less in price than bonds of lesser quality. Prior to World War I, when government bonds were scarcer than some obligations of private enterprise, high-grade railroad bonds were considered the "money bonds" of the period. This term implies that there is virtually no risk attached to the bonds and hence the yield offered at any time is virtually pure interest or the "price of money."

TABLE 6

OBLIGATIONS OF THE U.S. GOVERNMENT
HELD BY INSURED BANKS ON
DECEMBER 31, 1945¹
(millions of dollars)

Obligation	Amount
Treasury bills	2,455
Certificates of indebtedness	19,074
Treasury notes	16,047
U.S. savings bonds	1,194
Other bonds, 5 years or less	9,029
Other bonds, 5 to 10 years	32,230
Bonds maturing in 10 to 20 years	6,092
Bonds maturing after 20 years	2,786
Guaranteed obligations	21
Total	88,933

¹ Includes insured mutual savings banks. Source: FDIC, *Report No. 24*.

Fluctuations in interest rates affect bond prices, and the effect is greater the longer the bond has to run to maturity. Consequently,

when buying bonds as secondary reserves, banks have customarily purchased short maturities in order to eliminate fluctuations in their bond values as far as possible. Some banks, it is true, have attempted to shift into longer maturities when they predicted declining rates and into shorter maturities when they predicted rising rates. The low rates that have prevailed since 1935, however, have led most banks to concentrate on short maturities. In spite of the tremendous growth in government bond holdings during World War II, most banks maintained the average maturities of their holdings under five years.

Not only do short maturities protect against fluctuations in price based on changes in market rates of interest, but they enable the banker more easily to space the maturities so that repayments will provide an even flow of funds. The arranging of maturities which may be applied to loans as well as to investments improves the liquidity of the whole portfolio. If a bank made a 30-day loan every day, after the first 30 days a repayment would provide the funds for the new loan every day. If the funds were needed otherwise, the new loan would not be made. In practice, of course, a bank would be unable to arrange its loans to mature on a daily schedule because of the seasonal fluctuations in its customers' needs for loans, but this example illustrates the increased liquidity obtainable from spacing maturities advantageously. Similarly, a bank with \$50,000,000 of government bonds can so arrange its purchases that \$40,000,000 of the bonds mature within five years, approximately \$4,000,000 every six months. The remaining \$10,000,000 might have longer maturities in order to increase the yield somewhat.

The principal short-term obligations of the United States Treasury are certificates, bills, and notes. Short-term certificates are usually issued for only a week or less, sometimes for one day. Treasury bills are typically 90-day obligations but may run for nine months. For longer periods, up to five years, the Treasury issues notes, which are thus intermediate-term obligations when issued. Certificates of indebtedness may also be issued for longer periods, and during the war there were nine- to twelve-month certificates. Yields on various government obligations in the New York money market were as follows during the later war years: ⁸

⁸ *Federal Reserve Bulletin*, January, 1946, p. 60.

	1943	1944	1945
3-month bills	.373	.375	.375
9- to 12-month certificates	.75	.79	.81
3- to 5-year taxable notes	1.34	1.33	1.18
7 to 9 years, taxable	1.96	1.94	1.60
15 years and over, taxable	2.47	2.48	2.37

Determinants of Secondary Reserves

The principal factors the banker keeps in mind in deciding what proportion of his loan and investment portfolios to use as secondary reserves are the character of his deposits and how this affects his needs for funds at various times, and his capital ratio.

Types of Deposits

The nature of deposits varies widely in different banks. There are differences between large and small banks, banks in agricultural *versus* industrial areas, cities *versus* villages, and the like. One of the principal factors is the proportion of total deposits made up of time deposits. Time deposits are typically slower moving than demand deposits because, with few exceptions, they are not subject to check. Withdrawals take the form of cash, but more important, tend to be less frequent than withdrawals from demand deposits. This would not be a controlling factor except for two other considerations, namely, the tendency that withdrawals not exceed deposits and the long-run tendency that time deposits grow. As a result of these factors, a bank with a high proportion of time and savings deposits does not require as great a proportion of secondary reserves as does another bank with a high proportion of demand deposits. Even in times of distrust of the banks, like the early 1930's, time accounts will not be reduced to the same extent as demand deposits.

These considerations affect the banks' primary reserve policy as well, since lower reserve ratios are required for time deposits. The remaining funds are available for less liquid types of loans and investments, such as mortgages and long-term bonds.

The tendency for deposits and withdrawals to match fairly closely, in spite of seasonal fluctuations in both, is illustrated in Figure 5, which refers to savings banks. It will be noted that months of heavier withdrawals coincide with months of heavier deposits, so that the

total deposits do not change greatly even over the course of several years of widely varying business conditions.

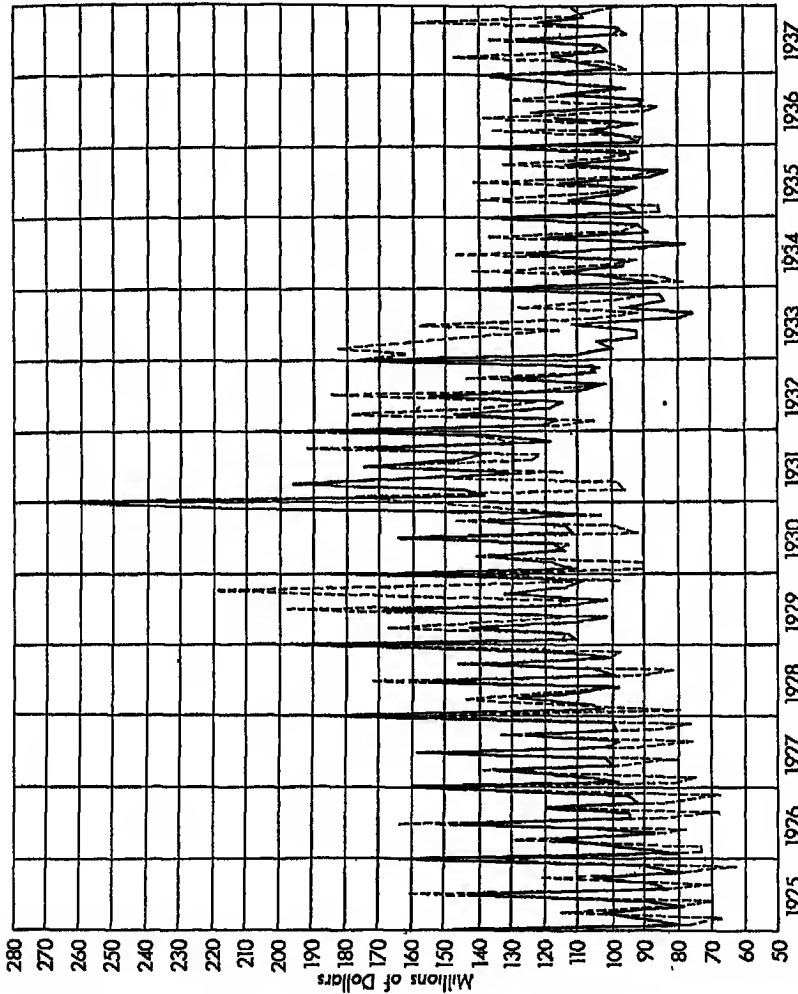


FIG. 5.—Monthly Deposits and Withdrawals of New York State Savings Banks, 1925-1937

Demand deposits may be made up of several different types, as well. The personal accounts tend, on the whole, to be fairly stable as far as seasonal fluctuations are concerned. Deposits of wage and salary earners and personal accounts of businessmen are likely to receive about the same deposits and withdrawals monthly. Business deposits, on the other hand, are more likely to increase and decrease

throughout the year more radically as the business firms build up or spend their balances. In areas dependent on one or two important crops the banks find their deposits large after the harvest and low at planting time when funds have been drained to other sections of the country or into cash in circulation.

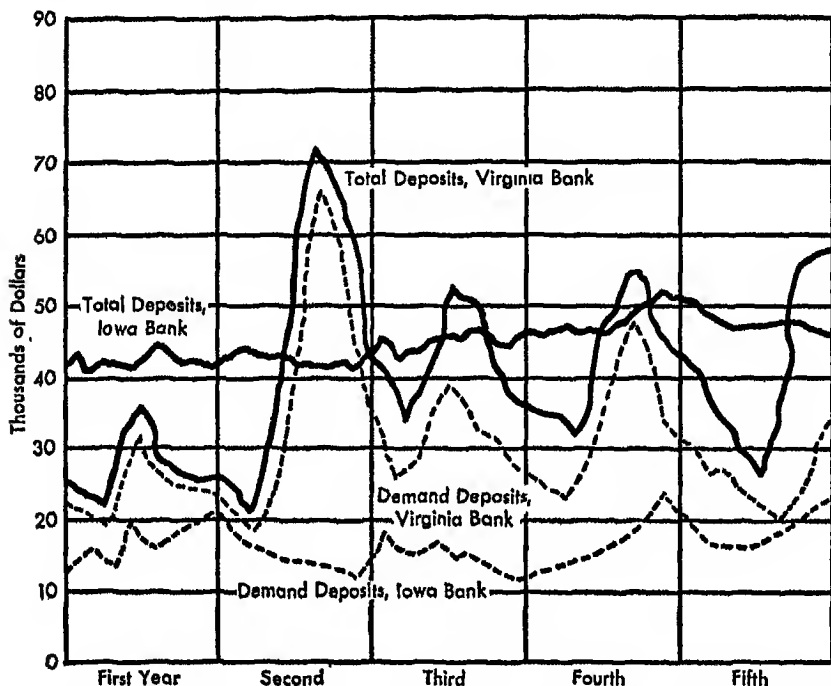


FIG. 6.—Demand and Total Deposits of Two Hypothetical Banks (based on actual banks).⁴

Figure 6 is a hypothetical chart based upon actual experiences of two banks, one in Iowa and one in Virginia.⁴ While the hypothetical lines closely approximate the actual, they are used here for more clarity and emphasis. The bank located in central Iowa is in a region "where a combination of crop and livestock enterprises produces a year-round income for farmers, and the expenses of production also are spread throughout the year." The Virginia bank is located in a region "where the principal sources of income are early white po-

⁴ F. A. Garlock, "Two Country Banks in Iowa and Virginia," *Banking, American Bankers Association Journal*, Oct., 1932, p. 54. Quoted in R. G. Thomas, *Our Modern Banking and Monetary System*.

tatoes, peas, lima beans, and a few other perishables. Expenses of production in this area are heavy from November to the middle of June, but the marketing season covers only the period from May through September. A large part of the income is received in June and July."

The influences of these incomes and expenses of the banks' principal customers are reflected in the deposits of the banks. The Iowa bank has a relatively stable total of deposits throughout the year, whereas the Virginia bank must be prepared for drastic variations. A seasonal peak is reached in July or August, after which a rapid decline takes place until the following summer. It should be noted, also, that the high and low points respectively differ materially from year to year as a result of crop yields and prices.

It is apparent that the Iowa bank has a small problem of liquidity compared to the Virginia bank. The latter "must hold liquid assets in July or August equal to 40 to 50 per cent of its deposits if it is to meet the withdrawals which commonly occur in the following months. An extra margin of liquid assets is needed to protect against annual changes in the lows of deposits."

Deposits and Types of Payments

The types of deposits, as illustrated in the preceding paragraphs, are important because different depositors evidence different patterns of deposits and withdrawals, and thus create differing problems of liquidity. The banker scarcely knows whether he has sufficient liquid assets unless he is well informed concerning the nature of his depositors' businesses and incomes, and, for that matter, he must be informed about the nature of all depositors in the area, not only his own depositors.

Among the questions that interest the banker in determining his secondary reserve policy is the relationship between tax payments in the area and government disbursements. Tax payments require checks to be drawn on local banks, leading to loss of deposits and reserves, while government disbursements lead to deposits and gains in reserves. In a similar manner, the banker is interested in whether his area will "import" or "export" on balance. Commercial payments for materials, supplies, equipment, and the like might mean that funds will flow out of the area in larger volume than they flow in

as payment for goods and services. Farmers, for example, may use their accumulated balances to purchase farm equipment with the result that balances move to other areas where the machinery is manufactured. Local investors may also choose to purchase securities or property in other areas, with like results.

The movement of currency is an indicator of the prospective rise or fall in deposits in a particular area. Some banks persistently withdraw currency from their reserve banks, while others persistently receive more than they need as till money and return it to the reserve banks. The first group may (for example) serve an employer who pays wages in cash, or whose employees cash their checks, and the second group may serve the merchants where a large part of the wages are spent.

The size distribution of deposits also gives clues to their probable activity. Large deposits usually belong to business firms or wealthy individuals, whose funds may shift to other banks when spent. Small deposits usually belong to individuals who maintain more or less the same average balances most of the time. In other words, the bank with large deposits usually finds that its total volume of deposits fluctuates more than the total volume of deposits in a bank with many small deposits and few large ones.

The Capital Ratio

The capital ratio of a bank is a prime factor in considerations of the safety of a bank's loans and investments. Strictly speaking, therefore, it is only indirectly a factor in secondary reserve policy as such, which is aimed more directly at liquidity. However, a bank with a low capital ratio should avoid capital losses and so it does tend to carry more secondary reserves for this reason than are required for reasons of liquidity. When a bank has capital and surplus of only five per cent of its deposits, which is fairly common today, a slight decline in the market values of its investments could make the bank technically insolvent. While this would probably not be disastrous under present rules, the outright loss that might be incurred on defaulted securities would place such a bank in a dangerous position. As was mentioned in the last chapter, decline in the capital ratio in recent years has been accompanied by a great rise in the holdings of government bonds. The two trends went hand in hand, as the

purchases of government bonds led to the increase in deposits and the lower ratio of capital funds to deposits. A postwar problem of many banks will be to build up their capital accounts through sale of new stock if they are to build up the proportion of business loans safely in the future.

XI

BANK EARNINGS AND FAILURES

BANK earnings are a result of various factors, a consideration of which throws further light on the nature of banking. A study of the earnings of banks contributes to the larger study of banking because :

1. Earnings reflect banking and business conditions in general.
2. Unusually high or low earnings in individual banks may indicate evasion of regulations or incompetent management.
3. Earnings determine the attraction of banking for investment capital and whether or not private enterprise will provide bank facilities.
4. Earnings not paid out as dividends build up the stockholders' equity, which is a cushion against bank failure.
5. Earnings are part of the expense of financing borne by customers of banks.

Prewar Earnings

The main sources of bank revenue are, of course, interest paid the banks on loans and investments. In recent years, even before the war, banks experienced a pronounced trend towards more investments at the expense of loans, with the result that bond interest be-

came a more and more important item in bank earnings. In 1929, for example, bank loans made up more than half of their total assets and investments comprised about a fifth, but in 1941 loans were only a quarter of total assets and securities were in excess of a third. Even so, however, the higher return usually obtainable on loans provided a greater total return from loans than from securities. Like any other enterprise, a bank must pay its expenses of operation from its gross earnings. The principal expense prior to 1933 was interest paid depositors, but interest payments on demand deposits were outlawed at that time, and wages and salaries have since become the largest item of expense. Out of net profits, the bank management chooses to retain some as capital; the remainder is available as dividends for stockholders.

Net Returns

Various earnings ratios are presented in Table 7 to illustrate the relative prewar importance of loans, investments, and reserves and the resulting trends in earnings. Changes in earnings during this period (1929-1941) reflect the increasing importance of investments and the rise of excess reserves.

TABLE 7

EARNINGS RATIOS OF MEMBER BANKS,
1929-1941

Ratio	1929	1933	1937	1941
Net return on loans	5.7	1.6	3.7	3.8
Net return on securities	4.7	1.3	2.6	2.1
Loans to total assets	54.6	38.7	29.1	25.7
Securities to total assets	21.5	36.2	39.3	36.5
Cash assets to total assets	18.2	18.9	27.8	35.5
Net profits to total assets	1.2	-1.1	.7	.6
Net profits to capital	6.1	-7.3	6.3	6.7

Source: *Monetary and Banking Statistics*, p. 264.

The precipitate decline in the net return on loans between 1929 and 1933 is apparent, along with a similar decline in the net return on investments. Except for the depression, loans have usually netted a return in the neighborhood of one per cent greater than securities. Consequently, the increasing proportion of securities as compared

to loans has been reflected in lower profits on total assets. Furthermore, during the period 1933-1941 the banks acquired very large excess reserves, which earned no interest, and this lowered the average return on total assets still more.

The ratios of net profits to total assets and to total capital in the preceding table reflect the net returns and other income less the various expenses. This return on total assets is seen to be a very moderate figure: 1.2% in 1929 and .6% in 1941. When these earnings are translated into yields on stockholders' investment they again appear moderate: a 6.1% profit in 1929, with slightly higher returns in 1937 and 1941. Losses and charge-offs led to a loss to owners of more than 7% of their capital in 1933.

Losses and recoveries realized on the various investments make a considerable difference in the net return to a bank. For example, in 1938 the interest return was 4.7% to which recoveries on securities previously written down and profits on securities sold added another 1%. Losses resulted in a deduction of .4% which left a net return on securities of 5.3%. In 1932, on the other hand, the interest return was 3.9%; recoveries and profits added .5%, but losses wiped out 2.6% leaving 1.8% as the net return. Similarly, losses on loans may eliminate a large part of the earnings. In 1932, member banks' losses on loans were 2.4%.

Expenses

Besides these gains and losses there are the regular operating expenses of the banks. Prior to depression legislation which banned payment of interest on demand deposits and gave the Board of Governors supervision over interest payments on time deposits, the interest banks paid their depositors was a large element of their current costs. The competition for deposits led banks to offer high interest rates, which in turn tempted them to seek high yields in their loans and investments. This weakening influence on the quality of bank assets contributed to the bank failures of the depression period. Table 8 summarizes the current expenses of member banks. It is interesting to note that throughout prosperous and depression periods, they have maintained about the same operating ratio (ratio of current expenses to total earnings). Hence, the profits and losses on loans and securities after interest has been collected stand out as the main determinant of the net profits of the banks.

TABLE 8

MEMBER BANKS' CURRENT EXPENSES
AS PERCENTAGES OF TOTAL EARNINGS,
1929-1941

% of Total Earnings	1929	1933	1937	1941
Salaries and wages	19.3	24.8	28.2	30.0
Interest on deposits	31.7	24.3	13.7	9.9
Other current expenses	19.2	21.4	26.4	29.8
Total	70.2	69.5	68.3	69.7

Source: *Banking and Monetary Statistics*, p. 264.

The Valuation Problem

There are conflicting opinions as to how fluctuations in the market prices of securities should be handled in evaluating banks' bond holdings and calculating bank earnings. On the one hand, it might be argued that fluctuations should be ignored for bonds which are not in default and which will be held to maturity. Such bonds would be carried at cost from year to year. On the other hand, it is never certain when a bank may be forced to sell bonds and therefore some recognition of market values is imperative. The difficulty here is that in periods of very severely declining security prices (like 1932) practically all banks may be termed insolvent if their bonds are valued at market prices.

Until the depression of the 1930's bank examiners usually valued bonds at current market value. At that time, some modification of the practice appeared necessary if many sound banks were not to be found insolvent. Modifications were made temporarily and in 1938 the Board of Governors, the Federal Deposit Insurance Corporation, and the Comptroller of the Currency agreed on new standards for bank examiners. Bonds were classified into :

1. "Investment Securities," namely, bonds which are not "distinctly or predominantly speculative"
2. Securities rated below the four highest grades of investment securities by rating services—"speculative securities"
3. Bonds in default
4. Corporate stocks ¹

¹ Member banks normally do not purchase stocks. The minor exceptions are stock in safe-deposit companies, corporations owning the banking premises, foreign banks, National Agricultural Credit Corporations, and Federal reserve bank stock. They may also acquire stocks which have been pledged for defaulted loans.

Gains and losses in market values of "investment securities" were ignored by examiners under the 1938 agreement. The second group of securities are evaluated at their average market price for the preceding 18 months, and one half of any depreciation so found must be written off. All of any depreciation occurring in the last two groups must be taken at once. Any profits from the sale of securities before being available for dividends must be applied to restoring these write-offs. In addition, premiums paid for bonds selling above par must be amortized to maturity. In these ways market values are recognized, but banks with sound long-term bonds are partially insulated from violent changes in market price.

Earnings by Size of Bank

The earnings ratios quoted above are dominated by large banks. "The 100 largest member banks have total earnings which, com-

TABLE 9
MEMBER BANK EARNINGS, 1941,
BY SIZE OF BANKS

Total Deposits (thousand \$)	Net Profits to Capital	Net Profits to Assets	Time Deposits to Total Deposits	Capital to Deposits
Under 250	5.8	1.1	25.3	26.7
250-500	7.8	1.0	35.8	18.3
500-1,000	8.2	1.0	41.3	15.2
1,000-2,000	7.5	.8	45.1	14.2
2,000-5,000	7.0	.7	45.9	13.3
5,000-10,000	6.7	.7	42.4	12.3
10,000-50,000	7.5	.7	31.0	10.3
50,000 and over	6.9	.5	17.9	9.2
All member banks	7.5	.9	40.3	15.1

Source: *Banking and Monetary Statistics*, p. 275.

bined, are approximately equal to the total earnings of the 6,500 other member banks."² Breaking the banks down into size groups allows comparisons of earnings of banks of different sizes, measured by total deposits.

² *Banking and Monetary Statistics*, p. 238.

Certain tendencies are quickly apparent, particularly that the net profits as percentage of total assets decline as the size of the banks increases. The largest banks earned only half as much percentagewise as did the three smallest groups of banks. This is explainable largely in terms of the higher degree of liquidity sought by large city banks and the higher proportion of local loans carrying the highest rates in small country banks. For the smallest banks, 45% of the assets were loans, while only 25% of the largest banks' assets were loans. Conversely, only 19% of the smallest banks' assets were securities, but 34% of the largest banks' assets were securities. Another factor, geographical location, affects these figures in that the smaller banks are often located in the South and Midwest, where capital is scarcer and interest rates higher, while the largest banks are clustered in the East. Earnings to total assets of country banks ranged from .2% in the Philadelphia Federal reserve district to 1.1% in the Kansas City district in 1941.

The profitability of banks to their stockholders does not vary between size groups in the same degree. It is true that the smaller banks are somewhat more profitable, but the smaller proportion of invested capital to deposits in the larger banks tends to hold the profits on capital fairly closely in line for all sizes. For example, the ratio of capital to deposits was 26.7% for member banks with deposits of less than \$250,000, but it was only 9.2% for banks with deposits over \$50,000,000.

Time Deposits

It was once thought that a high proportion of time deposits tended to make banks more profitable in that it permitted them to acquire less liquid assets and to maintain lower reserves. These tendencies are probably true, but they have been offset by other factors. Table 10 indicates just the reverse relationship, although it also illustrates the lower proportion of cash items held by banks with large time deposits. It may be seen that the higher the proportion of time deposits, the higher is the proportion of income earned from securities rather than from loans, and since preceding figures have illustrated the lower yield on securities, this explains the lower over-all profit. Interest paid for time deposits is an added factor.

TABLE 10

MEMBER BANK EARNINGS, 1941,
BY PROPORTION OF TIME DEPOSITS TO
TOTAL DEPOSITS

Time Deposits to Total Deposits	Net Profits to Capital	Net Profits to Assets	Interest on Loans to Total Earnings	Interest on Secu- rities to Total Earnings	Cash Assets to Total Assets
Under 25%	8.8	1.1	60.6	20.9	39.9
25-50%	7.9	.9	59.4	23.0	34.0
50-75%	6.2	.8	58.4	28.7	26.7
75% and over	4.0	.5	52.4	39.1	22.7

Source: *Banking and Monetary Statistics*, p. 275.

Earnings During the War

The tremendous increase in holdings of government bonds with its resultant over-all increase in total earning assets brought about a considerable growth in bank earnings during the war. Member banks in the Second (New York) Reserve District increased government security holdings from 31% of their total assets in 1942 to 57% in 1944. While the proportions of other securities and loans thereby declined, the total assets comprised a sufficiently larger sum that the net current earnings were 8.8% of capital in 1944 as compared to 6.7% in 1942. Net recoveries on assets previously written off provided further profits, so that 1944 profits before income taxes were over 10% of capital. After income taxes, net profits were 9.5%, more than double the 4.4% of 1942.

It may be observed from Table 11 that in 1942, when government securities were 31% of total assets and all securities were 44%, earnings on securities amounted to 36% of total earnings; but that in 1944, when securities comprised 64% of total assets, the earnings on these securities made up 52% of total earnings. The 15% of assets in the form of loans, on the other hand, provided 32% of the total earnings. This is indicative of the very low rates of return yielded by securities. The dividends paid to stockholders were a small part of total earnings, the larger part being used to build up surplus. Even so, capital declined as a percentage of deposits because of the great rise in deposits.

TABLE 11

EARNINGS OF MEMBER BANKS
IN THE SECOND RESERVE DISTRICT,
1942-1944

Ratio	1942	1944
Percentage of capital—		
Net current earnings	6.7	8.8
Net profits after taxes	4.4	9.5
Dividends declared	1.8	2.1
Percentage of total earnings—		
Interest and dividends	36.1	52.4
Earnings on loans	48.5	32.3
Service charges	7.0	7.2
All other earnings	8.4	8.1
Percentage of total assets—		
U.S. Government securities	30.8	56.9
Other securities	13.2	7.2
Loans	28.7	15.0
Cash assets	24.6	19.4

Source: Fed. Res. Bank of New York, *Monthly Review*, March, 1945, p. 20.

Bank and Other Earnings Compared

We may briefly compare the profitability of banking to that of other economic pursuits. Paradoxically, banking, which may be termed the business of manufacturing money, is not profitable on the average as compared to other enterprises. As was seen above, the wartime earnings amounted to approximately 10% of capital, which was much less than the earnings obtained in general by business. This was not an isolated instance of differences created by the wartime inflation; the same situation prevailed in 1939. A comparison is made in Table 12 of the earnings of different size groups of industries in 1939 and 1942 to illustrate two things: the greater profitability of nonfinancial business and the inflation of earnings during the early war years. The figures used for the comparison include finance, insurance, and real estate in one group, but they are sufficiently comparable with those quoted earlier to be usable. The relative unprofitability of very small businesses and financial firms

in general is sufficiently obvious to make a detailed discussion of the figures unnecessary.⁸

TABLE 12

EARNINGS AS PERCENTAGES OF OWNERS' EQUITIES,
CLASSIFIED BY INDUSTRY AND SIZE,
1939-1942

Total Assets (\$'000)	Year	All Industries except Finance	Finance, Insurance, Real Estate	Manufacturing	Retail Trade	Construction
Under 50	1939	-3.4	-9.6	.8	-5.5	.6
	1942	19.5	-5.5	25.2	14.0	34.0
50-99	1939	4.6	-1.2	7.0	2.9	6.0
	1942	20.0	2.1	26.2	14.6	35.9
100-249	1939	6.0	.8	8.4	4.5	4.8
	1942	22.4	3.2	22.4	17.7	39.8
250-499	1939	7.3	.1	8.8	5.8	5.5
	1942	23.8	3.2	30.2	19.6	41.5
500-999	1939	7.8	.1	9.2	5.8	5.0
	1942	26.0	3.1	31.9	21.6	39.0
1,000-4,999	1939	8.2	2.5	9.8	7.7	8.3
	1942	26.7	4.3	32.1	23.0	45.0
5,000 & over	1939	6.2	3.8	8.5	10.4	14.2
	1942	17.7	9.7	23.1	20.0	39.6

Source: Condensed from *Survey of Current Business*, January, 1946, p. 12. Earnings are before income taxes and have been adjusted to reflect salaries for smaller firms.

Bank Failures

Between 1930 and 1934 the American system of commercial banks fell apart completely. Bank failures were so numerous when Franklin D. Roosevelt became president on March 4, 1933, that practically his first official act was to order all remaining banks to close for a "breathing spell" while the situation was ironed out. By the end of 1933 the number of banks in existence had been reduced to half of what it was in 1920. While the 1930-1933 failures were

⁸ Although preceding figures indicated that smaller banks tended to be more profitable, the statistics are not in conflict because the "small" enterprises in Table 12 above are much smaller than those in Table 9 on page 154, and because a salary adjustment has been made in the figures above.

spectacular, and culminated in the temporary suspension of the whole system, they were merely an exaggeration of a weakness that has disgraced American banking from its beginnings.

It is estimated that since 1865 depositors have sustained direct losses totaling some two billion dollars through bank failures. These losses alone have been of serious import, but they represent only a part of the damage incident to insolvencies. The liquidation of insolvent banks is at best a slow process; and although depositors in such banks may eventually recover a substantial amount of their deposits, they are meanwhile deprived of the use of their money. Moreover, during periods of widespread suspensions, many areas have been left wholly without banking facilities. Business concerns, farmers, and other entrepreneurs have been unable to secure bank loans, and communities have suffered from the lack of a convenient means of payment.⁴

Meaning of Failure

There are several meanings attaching to the word "failure," and statistics on bank failures or suspensions are not, therefore, entirely comparable or consistent. Like any other business, a bank is "insolvent" if its assets are not sufficient to offset its liabilities. When the values of a bank's securities decline, the dollar amount of its deposits does not decline concurrently; the stockholders' equity in the assets is reduced, and when it disappears insolvency begins. Insolvency may not be permanent and need not necessarily lead to the closing of the bank; if depositors do not demand their deposits in sufficient volume to require liquidation of the assets at low values, the condition of insolvency can wear off as asset values improve. On the other hand, of course, if the bank is called upon to meet its obligations and cannot, or if it is required by the banking authorities to suspend operations, it must then, to the extent possible, pay off the creditors equally. Sometimes a bank may suspend voluntarily for any of a variety of reasons: to forestall expected future failure, to liquidate so that the owners can enter another business, and similar reasons. Also, suspended banks may reopen, after arranging for depositors to scale down their deposits to a level that matches the assets. Involuntary suspensions are usually taken as the measure of bank failures, and statistics referred to in this chapter are based upon them.

⁴ *Monetary and Banking Statistics*, p. 28x.

Reasons for Failures

The extent of suspensions on a national scale is indicated in Table 13. It is apparent that most failures have been state nonmember banks. There are several reasons why these banks have been the weakest group in the system. Nonmember banks are usually small banks in small towns; they are thus more likely to lack diversity of assets and good management. In the period 1921-1931, 57.5% of the bank failures occurred among banks with capital stock of \$25,000 or less. Less than 1% of the failures were attributed to banks with over \$1,000,000 of capital stock. The lower limit of capital stock for national banks is \$25,000; hence the large group of failures among smaller banks was state banks and usually nonmember ones. Similarly, 59% of the failures occurred among banks with loans and investments of less than \$250,000.

Since most small banks are located in small towns, similar statistics exist on failures by size of town. In this same period, 35% of the failures took place in towns of less than 500 people and 75% took place in towns of less than 2,500. To a large extent, then, bank failures have been a small-town problem.

The failures of these particular banks are further explained by the location of these banks in agricultural areas, by the lack of adequately trained bank management in these localities, and by other reasons that can be summed up as the multiplicity of banks.

Bank failures since World War I tended to cluster in agricultural areas because of the depression in farming during the 1920's and early 1930's. Although industry in general prospered during the decade after the war, the overexpansion of agriculture, following the very high prices for farm products and farm land during the war, kept the farmers in straitened circumstances. Surpluses of farm products depressed their prices, and the mortgages made by farmers during the war kept a heavy load of interest payments on what cash income farmers did receive. The result was a relatively high proportion of defaulted loans and trouble for the banks that had large proportions of their assets in this form. The greatest concentration of banks per population was in the farming areas, North and South Dakota and Nebraska leading all other states.

There are two aspects of management that are important to

the success of banks, competence and honesty. It was almost inevitable that over 25,000 banks could not all have good management, nor for that matter, honest management. It is also most likely that the poorest management would show up in the smallest banks in the smallest towns. Honesty is probably not a geographic characteristic, but dishonest management is likely to have more leeway in small banks where the directors are not so well informed as in large city banks, where the directors are likely to be outstanding financiers and businessmen.

TABLE 13

COMMERCIAL BANK SUSPENSIONS,
1921-1945

Year	Total	National	State	
			Member	Nonmember
1921	461	52	19	390
1922	343	49	13	281
1923	623	90	32	501
1924	738	122	38	578
1925	579	118	28	433
1926	924	123	35	766
1927	636	91	31	514
1928	479	57	16	406
1929	628	64	17	547
1930	1,292	161	27	1,104
1931	2,213	409	107	1,697
1932	1,416	276	55	1,085
1933	3,891	1,101	174	2,616
1934	44	1	...	43
1935	34	4	...	30
1936	43	1	...	42
1937	58	4	2	52
1938	52	1	1	50
1939	41	4	3	34
1940	22	1	...	21
1941	8	4	...	4
1942	9	...	...	9
1943	4	2	...	2
1944	1	...	...	1
1945	0	...	...	...

Source: *Banking and Monetary Statistics*, p. 52 and *Federal Reserve Bulletin*, January, 1946, p. 50.

Local bankers are no more likely to be outstanding in business than are local hardware merchants or grocers. In fact, one could almost conclude from the high failure rate of banks that they are likely to be less outstanding. Dun and Bradstreet figures show that until recently business failures were less in proportion than bank failures. The local banker has shown a tendency, at least in the past, to invest bank funds in local enterprises at the expense of diversification of assets. The banker probably feels that these are enterprises he knows something about, and the typical "booster" spirit probably intensifies the tendency. Local real estate, manufacturing, and merchandising ventures have been likely to absorb more of the banks' funds than wise policy would dictate. If a bank is located in an agricultural area, most of the town's business suffers if farmers do poorly. The effects of the agricultural depression on the banks were intensified by this factor. Local bankers know every businessman in town, and personal considerations come into the weighing of whether to grant or refuse a loan.

Multiplicity of Banks

Most of these reasons stem back to the multiplicity of banks in our unit banking system. Other results have come from the same cause. The multiplicity of banks, resulting from easy incorporation and low capital requirements, meant competition among numerous small banks. This competition often resulted in the payment of high interest rates on deposits, as mentioned above. Each bank felt that it had to pay to get deposits, and therefore had to make loans and buy investments that would cover this cost. Bank borrowers could shop around from bank to bank to find the least strict banker. One way to get the borrower's deposit was to grant him a line of credit. This fact further accentuated the concentration in local loans.

Interbank competition also led to high costs through construction of showy bank buildings and purchase of impressive equipment. Although some small banks managed to operate in converted stores with wooden floors and simple fixtures, there was a general feeling that a bank was not "real" unless it was housed in a stone castle with marble columns, tile floors, and lots of brass grillwork. When two or three banks operated in a town of 2,000 people, the employees were not fully occupied and there were more officials and employees than the banking business of the town should support.

Depressions

The periods of great business failures have been, of course, periods of business depression. All of the depression years have shown increases in bank failures, but the figures for 1929-1933 in Table 13 are most striking. One might think that the 479 failures in 1928 were bad, considering the lack of failures in England and the single failure in Canada during the whole decade, but in 1931 every tenth bank in operation at the beginning of the year failed during the year. The failure rate, measured by number and deposits, is shown below:⁵

<i>Year</i>	<i>Rate, by Number</i>	<i>Rate, by Deposits</i>
1927	2.5%	.4%
1928	1.9	.3
1929	2.5	.4
1930	5.6	1.6
1931	10.4	3.2
1932	7.6	1.7
1933	22.5	10.0

Depression periods naturally lead to bank failures—granting the other weaknesses of the system—because of inability of borrowers to repay and decline in security values. But a further development often takes place when heavy withdrawals such as those of 1931-1933 occur. These withdrawals often start simply because the public fears bank failures, and the withdrawals then actually cause the failures the public fears. Many banks that were not required to liquidate on a large scale managed to ride out the storm until asset values recovered, but the failures took place when banks no longer had assets they could liquidate by sale or rediscount at the Federal reserve banks.

Bank Failures, 1930-1933

The depression of the 1930's dates from the wholly unprecedented drop in stock-market prices in October, 1929. At that time, New York City banks had a large volume of brokers' loans, and they had

⁵ The 1933 figures are not strictly comparable to the others owing to the several types of temporary suspensions and restrictions imposed in that year. See *Monetary and Banking Statistics*, p. 282.

made still more loans to brokers as agents for banks as well as for "others," meaning business corporations and other investors. The immediate reaction was that all of these lenders called their loans when stock prices began to fall. This intensified the selling of securities. In an attempt to stop the wave of selling, New York banks tried to take over the loans needed by brokers and their customers from the interior banks and other lenders. In a short time they increased their loans to brokers by nearly \$1,000,000,000. The Federal Reserve Bank of New York rendered great assistance by purchasing securities from the banks and lending to them in order to provide the necessary reserves.⁶

The drain of currency into hoarding, as well as for use in areas without bank facilities following bank suspensions, reached serious proportions in the winter of 1931-1932. Over \$1,000,000,000 of bank reserves were absorbed by gold exports and increased money in circulation. Loss of reserves kept the banks in a continuous "tight" situation, and nearly all banks were refusing to renew loans and trying to liquidate assets before security prices went lower. As a result, the index of high-grade bond prices fell from approximately 100 to 82 during the second half of 1931.

One of the principal difficulties was that banks in many areas did not have eligible paper to rediscount at their reserve banks in order to obtain additional reserves. More and more the banks had become investors rather than lenders of short-term working capital, so that when the emergency came they had to turn to the security markets to liquidate. This development was fostered by the booming stock market of the preceding decade during which corporations acquired working capital by sale of securities and liquidated their bank loans.

During this period of bank failures, the banks set up a cooperative National Credit Corporation by subscribing amounts equal to 2% of their deposits—the proceeds to be lent to banks needing assistance. The number and amount of loans were small, however. Along somewhat the same lines, the government established the Reconstruction Finance Corporation to lend to banks, railroads, and certain others. According to the original legislation in 1932, the Corporation was to obtain \$500,000,000 of capital from the Treasury and was authorized to sell bonds for \$1,500,000,000 more, an amount which

⁶ More will be said of reserve bank action at this time in Chapter XXVI.

was later increased. In 1932 the Corporation lent \$850,000,000 to banks of various kinds. As a result of these measures, and others taken by the reserve banks, bank failures declined rapidly during 1932.

Late in the year, however, another hoarding wave began, which was probably accentuated by fears that the country was going off the gold standard. Gold exports increased, and a significant proportion of hoarding was in the form of gold and gold certificates. The Reconstruction Finance Corporation was overwhelmed by a new wave of failures. Under legislation then in effect the reserve banks were unable to be of much more assistance. As a result of failures cumulating into more hoarding and more failures, several states began to declare "banking holidays" during February, 1933. By March 4, the inaugural day of President Roosevelt, practically all banks, national, state, and Federal reserve, were closed.

Succeeding developments were intimately associated with changes that were taking place in the monetary standard of the country and are therefore discussed in Chapters XXVI and XXVII. One development was the establishment of insurance for bank deposits on a national scale, which is described in Chapter XXIII. It should be added here, however, that the wave of failures did come to an end and that the depression period was followed by one of recovery and then of war. Because of improved economic conditions, a great increase in bank reserves, elimination of many weak banks, and improved banking legislation and supervision, the number of bank failures declined steadily and rapidly after 1933. For the first time since banks became numerous in this country, there were no bank failures in 1945. The Federal Deposit Insurance Corporation was able to announce in the summer of 1946 that there had been no failures in over two years.

XII

BANKING PRIOR TO THE CIVIL WAR

DURING the early history of the United States, most of the banks provided a sorry spectacle of all the things a banking system should not be. There were a few bright spots, however, and the contrast between these and the situation in general will serve to reveal the more widespread difficulties. Most banks were state-chartered institutions with inadequate capital and overdeveloped profit motives. There were two examples of federally chartered banks which, except for the accident of history, might have provided the country with a strong central bank. There were also rare examples of relatively advanced state banking laws.

Federal Incorporation

Early Banks

The earliest banks were land or mortgage banks rather than commercial banks. They were devices for creating currency in the form of notes in Colonial times, which sprang from the severe lack of circulating media of the day. An organization would be formed for the purpose of making loans—commonly to the organizers—secured by real estate. Little or no provision would be made for re-

demption of the notes in hard money, so the notes were likely to circulate at various discounts from their face values, depending upon people's opinion of the likelihood of future redemption. The increase in circulation tended to raise prices. The land security thus appeared to be worth more, and larger issues would then be made on the same security.

During the Revolution a bank was started under the name of the Bank of North America to make loans to the Continental government. In order to start the bank, the government subscribed to most of the capital. Later, when the right of the government to charter a bank was challenged, the bank obtained a charter from Pennsylvania. It operated under this charter until 1864 when it joined the National Banking System and again obtained a national charter.

The historic importance of the Bank of North America lies principally in the fact that it was essentially a commercial bank, in contrast to the earlier land banks. The capital subscribed and deposits made gave the bank funds with which to start. Redemption was maintained, so the business community of the day came to regard the bank's notes as good as specie for most transactions. With the funds at its disposal the bank made loans to business firms and to the government, which is essentially the same role played by commercial banks today.

Prior to establishment of the bank, businessmen themselves had been both borrowers and lenders, as their circumstances required. When one businessman had more funds than his business required he might lend them to another; later on he himself might become a borrower when his business required more funds than he owned. The Bank of North America in a sense was merely an organization to facilitate this process, since idle funds were deposited at the bank and lent to the business community.

Bank of the United States, 1791-1811

At the suggestion of Alexander Hamilton, Congress granted a charter to the Bank of the United States in 1791. Hamilton's reasons for desiring a bank were (1) to increase the supply of money in order to facilitate trade and industry, (2) to facilitate the paying of taxes by lending to taxpayers if necessary, and (3) to establish an institution that could lend to the government itself in case of need. The

formation of the bank illustrates on what a slender "shoestring" a bank may be established. Owing to its other strong points, this bank survived, but many weaker state banks did not. The government subscribed to one-fifth of the total capital of \$10,000,000, but borrowed the money with which it bought the stock from the bank itself. In other words, it traded government bonds (then called stocks) for bank stock. The other four-fifths of the stock were to be paid for one-fourth in gold or silver coins and three-fourths in government bonds. As it turned out, this provided the bank with sufficient specie reserve, along with the specie deposited with it, to maintain redemption of its notes. In addition, the demand that the establishment of the bank created for government bonds strengthened them and provided a measure of solvency.

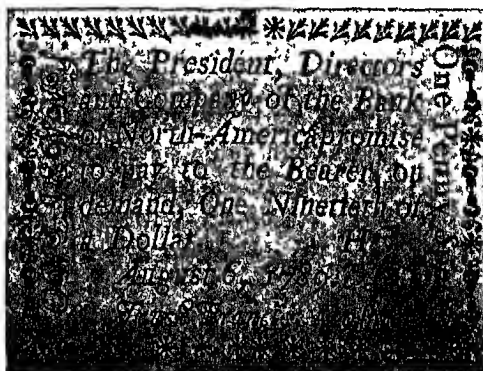


FIG. 7.—One-Penny Note of the Bank of North America. (Courtesy of the Chase National Bank. From the Chase National Bank Collection of Moneys of the World.)

The main benefits of the bank stemmed from its effect upon the state banks which were beginning to spring up. The principal attraction of banking was the power to issue notes and lend them, and in the absence of effective public regulation there was always a tendency for excessive issues, which would decline in value. State-chartered banks became more numerous and by 1811 there were 88 of them. The bank refused to accept for deposit or in payment of loans notes of any bank that refused to redeem its notes at par in specie on demand. It went further, and presented for redemption any notes that came into its possession. As a result, the state-bank issues were held to manageable amounts, and the country enjoyed a fairly sound bank-note money supply.

The bank's own notes carried legal tender powers, and as a result of their limited and careful issue to borrowers, came to be an important part of the circulating funds of business. As was customary at the time, notes were not issued in denominations of less than \$5.00; hence they had little circulation except in business and other large transactions. While the bank thus made funds available to business, it was also of considerable assistance to the government. The Treasury borrowed as it needed funds, and also carried its deposits at the Bank of the United States. The bank transferred these funds to different points in the country as needed. Through its exchange business the bank sold funds at different branches to the government or business firms, facilitating nonlocal payments, and also bought and sold most of the foreign exchange that was dealt in at the time.

Unfortunately, the bank was not politically popular, and when its 20-year charter expired in 1811, Congress refused to renew it. The fact that foreigners were heavy stockholders was a great political disadvantage. Prospective founders of state banks, who foresaw the prospect of making fortunes if freed from the restraints of the bank, led the fight by which renewal was denied.

The expiration of the bank left the country with no central banking institution just at the outbreak of the War of 1812. To finance the war the government borrowed heavily from state banks. This eventually cost the government severely. The bank notes it took in exchange for its bonds depreciated so considerably that the government could not obtain full value when spending the money. So many notes were issued that the banks soon were forced to suspend specie payments. On the other hand, the government was bound to repay its own loans, with interest, in gold and silver.

The Second Bank of the United States, 1816-1836

The losses of the government and private interests in the banks of the period, as well as the price inflation stemming from voluminous issues, convinced enough members of Congress again of the need for a government-chartered bank. Hence the Second Bank of the United States was chartered in 1816. In organization it was very similar to the First Bank of the United States, except that it was larger, having a capital of \$35,000,000. Again the government sub-

scribed to one-fifth of the stock. As it turned out, the history of the Second Bank was a sadder story than that of the First Bank. The five directors appointed by the government out of the twenty-five in all were qualified mainly by their political connections. So was the first president, named Jones. The bank failed to require stockholders to pay one-fourth of their subscriptions in specie, as required by the charter, but worse, it embarked upon a policy of making widespread loans for the purpose of making large profits. Further, loans were made by the bank to its own officials.

Besides these actions, questionable on ethical grounds, there were others of equally dubious economics. The branches of the bank established in the West lent notes freely. These notes were frequently sent to the East in payment for goods. There, the recipients were likely to redeem them for specie. When the loans fell due, they would normally be repaid at the branches which made the loans. This did nothing to replenish the coffers of the main office or the eastern branches which had redeemed the notes. The western offices might also sell drafts against the eastern offices. This involved taking in funds in the West and paying them out, to meet the drafts, in the East. If trade between the East and the West had been equal, there would have been an equal amount of drafts drawn by the eastern branches for payment in the West, but this did not take place. The resulting drain of the bank's resources to the western branches seriously handicapped its operations.

These operations, and more probably the scandals that arose because of the improper loans, forced Jones' removal in 1819. His successor, Langdon Cheves, pursued policies designed to correct the evils. The power of the western branches to issue notes was strictly curtailed, and they were ordered to send specie back to the East. A rigid policy of not accepting notes of nonredeeming state banks was enforced. Although these measures restored the soundness of the bank and went a long way towards eliminating the overissues of the state banks, they of course incurred for the bank the enmity of western and southern state bankers as well as businessmen and speculators who wanted an easy source of loans. These interests went to their respective state legislatures for redress. The legislatures passed various laws intended to hinder the Second Bank of the

United States in its attempts to improve the state bank issues. Some forbade the demanding of specie for bank notes; others laid special taxes upon the bank. Legal battles arose which, the Federalist philosophy predominating, were won by the bank when they reached the Supreme Court. A Georgia law preventing the bank from insisting upon bank-note redemption and an Ohio law levying a tax on the bank were declared unconstitutional.¹ These judicial victories did not silence criticisms of the bank, however.

At this point, in 1823, Cheves stepped out. He was succeeded by a brilliant young man of thirty-seven, Nicholas Biddle who pursued the sound policies of Cheves but lacked the necessary political finesse to make them palatable. Andrew Jackson, a Westerner and a "commoner," was by background opposed to the "monied interests" allied with the bank. When he also discovered that Biddle was engaged in political maneuvering in favor of his rival, Henry Clay, he determined to destroy the bank. Again, the forces of inflation were too strong politically, and those who wanted to make large loans of unredeemable state bank notes as well as those who wanted to borrow them became a majority. Even before the end of the charter, due to expire in 1836, Jackson ordered the deposits of the government withdrawn and deposited in state banks, known as his "pet banks." This loss of funds, in effect, spelled the end of the bank. However, a majority of Congress did vote to renew the charter, but when Jackson vetoed the bill, there were not enough votes to override the veto. The bank obtained a charter from Pennsylvania but eventually failed.

¹ An important decision emerging from this controversy was that handed down in the famous case of *McCulloch v. Maryland* (4 Wheaton 316) in 1819. Maryland imposed a tax on all banks or branches not chartered by the state, aimed at the Bank of the United States. The law required notes to be printed in certain denominations and on stamped paper, or a tax paid. Justice Marshall said that "the power to tax involves the power to destroy. . . . If the States may tax one instrument, employed by the government in the execution of its powers, they may tax any and every other instrument. They may tax the mail; they may tax the mint; they may tax patent rights; they may tax the papers of the customhouse, they may tax judicial process; they may tax all the means employed by the government, to an excess which would defeat all the ends of government. This was not intended by the American people." This decision still blocks taxation of interest on government bonds by states and until 1939 (*Graves v. O'Keefe*, 306 U.S. 466) prevented states from taxing personal incomes paid by the Federal government and vice versa.

State Banks

The demise of the Second Bank of the United States made possible the resurgence of banking subject only to whatever regulation state governments might see fit to impose. In general, this regulation was conspicuous mostly by its absence. Even when there were regulations requiring stockholders to pay actual cash for their shares, these regulations were often ignored or evaded. As a result, a bank would be started by loans to prospective shareholders of the funds to buy the shares; in other words, the only assets a bank would have to start with would be the promissory notes of its own stockholders. Its next step would be to issue notes, which it would then lend to all comers. The more it lent, the greater was the volume of loans on which it collected interest. Clearly, the bank depended for its profit upon keeping its notes in circulation; if the notes were redeemed, it had to pay out specie money in exchange for its own obligations, thus reducing its lending ability. Consequently, banks often threw every possible obstacle in the path of those who might want to redeem their notes. Especially in the West and South, banks promised to redeem notes only at their "main" offices, which they then located in cabins miles from any settlement and not on any road. This "banking among the wildcats" led to the expression "wildcat banking." By this time (1836) there were approximately 700 state banks.

Popular sympathy was often with the bankers. It was thought that they were doing a public service by providing society with a circulating money, and people never thought there was enough money. In these sections of the country, also, speculation was a normal line of endeavor. Since the country was new and growing, values of real property were usually rising. If one could borrow from a bank and buy property, in a few months he might sell at a sizable profit and repay his loan. For this prospect, the troubles of a disordered currency appeared bearable.

Private Banks

While state banks were obtaining charters in ever increasing numbers, unincorporated banks were also increasing. Such unincorporated, or private, banks found it desirable to do business under the

common law rather than subject to a specific charter. This involved both advantages and disadvantages, for while they were free from charter restrictions (which were probably lenient anyway) they were sometimes barred by state law from issuing notes. Consequently the private banks were found mostly in cities. There they could receive appreciable deposits and at the same time have access to commercial borrowers. In the cities use of deposits as means of payment was becoming more widespread and tending to replace use of notes. "Such unincorporated banking houses seem as a class to have been no less reputable and sound than were the incorporated banks taken as a class."²

Bank Notes

These early banks provide good lessons concerning the nature of banks and the nature of bank credit as money. Not much need be said concerning bank deposits in relation to these banks prior to 1850 because, as a rule, deposits were not transferred by check. When it was used as money, bank credit usually was in the form of notes. If notes merely represent the money people are accustomed to using, such as the specie which historically preceded credit money, such notes eventually become a satisfactory substitute for the specie. Socially, they are a desirable substitute because to make money out of paper is much cheaper than to mine it out of the ground, refine it, and coin it. In the transition stage, however, the money must grow to be equally acceptable. This it can do only if people feel that whether they accept a bank note or specie does not matter because they can exchange the note for specie at the issuing bank. While this stage of development exists, banks must carry large enough specie reserves to meet any likely demands for specie for redemption. Stated in reverse, they must not lend so many notes that their redemption is endangered. This, in their search for profits, our early banks failed to do.

These old bank notes illustrate the nature of bank money very lucidly. Collectors still have many, such as those issued by the Valley Bank of Maryland, located in Hagerstown, in 1855. They are simply engraved pieces of high-grade paper which state, "The Valley Bank of Maryland will pay twenty dollars on demand to"

² Staff of the Board of Governors, *Banking Studies*, 1941, p. 9.

or bearer at Hagerstown. Dated . . . , Signed, , Cashier, President." This means that when a borrower applied to the Valley Bank for a loan, the cashier took some of these blank forms, filled them out, and turned them over to the borrower for the amount of the loan. Theoretically, the borrower, whose name was inserted on the note, could then withdraw specie, \$20 for each note. This would seldom happen if the notes themselves were spendable. If this borrower's creditors would accept the notes, and then if their creditors would, and in turn their creditors, and so on, these notes would become money instead of mere claims to money. In those days, however, someone would be a little more skeptical than his brethren and actually demand his "twenty dollars." If enough of them did and the bank could not meet its promises, the bank failed. If the liquidation of its loans and other assets failed to bring the amounts due the noteholders and depositors, these creditors lost their money.

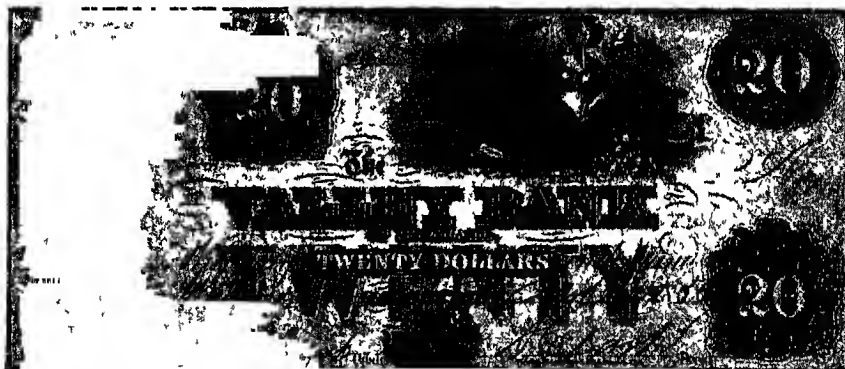


FIG. 2.—Early State Bank Note. (Reprinted by special permission of the Secretary of the Treasury. Further reproduction in whole or in part is strictly prohibited.)

Consequently, state bank notes were accepted with more or less reluctance by sellers of goods and services. Even if the notes were actually redeemable, there might be certain costs in going to the bank, some distance away, and redeeming them. One bank would not be likely to redeem the notes of another because that would entail the paying out of its own scarce reserve. During this period between 1836 and 1864, then, various issues of bank notes circulated at different rates of discount. A five-dollar bank note might or might

not buy goods equal to five gold dollars' worth. The storekeeper would first have to ascertain if the bank were still in business, and, if so, whether it redeemed its notes, and if it did, what discount was commanded by distance. Naturally, the money system was extremely complicated, unwieldy, and unsatisfactory. Bank failures were frequent; banks built up obligations they could not meet from their assets.

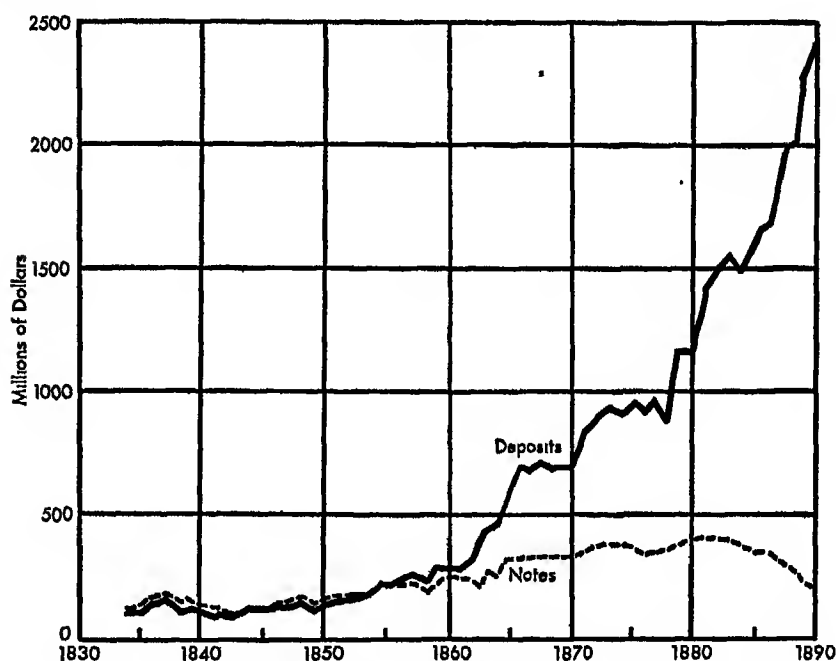


FIG. 9.—Bank Notes and Deposits, 1830-1890. (*Banking Studies*, p. 13.)

During the years immediately preceding the Civil War, however, bank deposits began more and more to be used as currency. By 1855, the volume of bank deposits began persistently to exceed the volume of bank notes. The volume of deposits charted in Figure 9 fails to measure the comparative use of deposits as money as against the use of notes. Time and savings deposits are included, and we do not know the relative frequency of the spending of deposits compared to notes. However, it is clear that about 1855 bank deposits began to grow at a rapid rate and very soon clearly overshadowed bank notes as the principal form of bank credit.

The Independent Treasury

As a result of losses incurred by the Federal government through the holding of bank deposits in closed state banks or depreciated bank notes, the famous "specie circular" was issued in 1836. This instructed the sales agents of the government to accept only specie in payment for government lands and to refuse bank notes. This action has received most of the blame for precipitating the crisis and depression of 1837. The rush to redeem notes for the specie required for land purchases promptly "broke" numerous banks. Others that had been formed in expectation of receiving government deposits of land-sale proceeds also collapsed.

Following the depression the Congress attempted to protect the government against further losses through failure of bank credit. The alternatives were a successor to the Second Bank of the United States or the Independent Treasury plan. The latter was adopted. The essence of simplicity, the plan adopted in 1840 provided that the government would accept only specie or its own notes in payment of public dues; the specie was to be stored in the vaults of the Treasury or subtreasuries and paid out as needed. It would not be deposited in banks. The plan was controversial and was repealed in 1842 but restored in 1846.

Needless to say, the plan was successful in preventing losses to the Treasury, but it created other problems that were perhaps as bad. Since the specie was physically removed from circulation upon payment of taxes, banks lost reserves to that extent. If the funds had been spent promptly, they would have been restored to the banks, but expenditures were not synchronized with receipts. The tariff was the leading revenue producer, and in boom times heavy imports provided Treasury surpluses, which for the time being withdrew the specie altogether. Thus, the banks were deprived of reserves at just the times when the demand for hand-to-hand money and loans was greatest. The impossibility of the situation was demonstrated during the Civil War when the government sold sufficient bonds at a time to absorb a great deal of all the specie in circulation and in bank reserves. As time went on the plan was modified to permit deposit of government funds in banks approved by the Secretary of the Treasury, and in times of financial stress these deposits increased the

banks' reserves. Of course, such deposits merely offset the stringency that the plan caused in the first place. In its modified form the Independent Treasury existed until 1920, when World War experience had demonstrated the necessity of transferring its functions to the Federal reserve banks.

Reforms Prior to 1863

In the welter of bank notes of varying degrees of worthlessness and bank failures there were a few omens of reform during the period of state banking. The outstanding examples were (1) the Suffolk Bank System established in Boston in 1818, (2) the Safety-Fund System of New York, begun in 1829, (3) the Free Banking System begun in New York in 1838, (4) the Louisiana Banking System established under the law of 1842, and (5) the state-owned Bank of Indiana, established in 1834.

The Suffolk Bank System, 1818

The Suffolk Banking System is interesting in that it was imposed upon the banks by one of them, the Suffolk Bank of Boston. The banks within the city of Boston found themselves unable to lend out notes and keep them in circulation because they were redeemed almost as fast as they were issued. This kept the banks' loans down to their specie available for lending. The reason why their notes were redeemed was that when someone in Boston wanted specie he found it much cheaper and quicker to go to a Boston bank to redeem a note than to take or send notes to country banks located several miles from Boston. Anyone who might redeem a country bank note in Boston would do so only at a discount because of the expense and delay he would incur in redeeming the note at the issuing bank.

The Suffolk Bank took the lead in solving the problem and set up a system whereby it would redeem at par notes of any country bank which would keep a deposit in the Suffolk Bank for that purpose. Naturally, the country banks did not take kindly to the system, as they were not anxious to have their notes redeemed and their lending powers curtailed. The Suffolk Bank then announced that it would accumulate the notes of any noncooperating bank and present them in large amounts for redemption, thus threatening to "break" that bank. This brought the other banks in line and thereafter country

bank notes were redeemable at par on demand, either at home or in Boston. The primary result was, of course, that Boston banks could then make loans in the form of notes and not fear their immediate return, but the more important secondary result was the improved soundness of the country banks and their notes. Being unable to lend as much as before, they restricted their loans to sounder borrowers and also had adequate reserves to meet redemption when demanded. In 1837, when the excesses in other parts of the country described above led to general suspension of specie payments and bank failures, the New England banks came through without suspending specie payments.

Safety-Fund System, 1829

The Safety-Fund System of 1829 in New York State was an attempt to alleviate losses that noteholders and depositors suffered when banks failed. This was both a social and an economic problem. It was social in that nearly everyone at times was a noteholder. Poorer people had no way of knowing about the soundness of notes that were paid them for their labor or their goods. When they lost because the banks that had issued their notes failed, it was a catastrophe for them. The problem was economic in that whenever notes or deposits became worthless or partly so because the banks went out of business, that much purchasing power was lost. Not only did the owners themselves lose, but trade was deterred.

The Safety-Fund System was a provision whereby the banks contributed to a central mutual insurance pool. The contributions were one-half of one per cent of the banks' capital until they reached three per cent. This fund was to be used to make up any deficiencies owed to noteholders or depositors of failed banks after the assets were liquidated. During the early years so many banks failed that the fund was inadequate. This led to an amendment whereby the noteholders had a first lien on the safety fund. The amendment was based upon the reasoning mentioned above: depositors presumably can choose their banks and have an opportunity to avoid weak ones, whereas notes come into people's hands daily, without giving them adequate opportunity to look into the standing of the bank. It is questionable whether, in fact, depositors exercise much judgment either, but a hundred years ago not many people were bank deposi-

tors and those who were supposed to know something about banks.

Although the Safety-Fund System is generally considered a failure, the idea of insuring or guaranteeing bank notes, and sometimes deposits, has been a persistent one and many experiments have been attempted. In 1933 the Federal government adopted a deposit guarantee scheme based largely on the experience of this and other previous experiments.

Free Banking, 1838

The banks belonging to the Safety-Fund System had been granted special charters by the legislature, which was the common practice at that time. There were obvious opportunities for abuse in the system, such as bribing legislators to vote for a charter for one bank or against one for another bank which would compete with one already established. The reform of 1838, the Free Banking System, abolished special charters in New York. General rules were set up and anyone wishing to start a bank who could meet the requirements was to be granted a charter by the appropriate state official. A different approach to the problem of notes was attempted, that of securing them by deposit of bonds of the Federal or New York State governments, or those of certain other approved states, or certain other restricted securities. These securities were to be liquidated in case of bank failure, and the proceeds devoted to paying the obligations to the noteholders.

Under this system a bank could invest in government bonds, deposit them with the state government, and then issue notes to a corresponding amount which it could lend. It would thus collect "double interest," on the bonds and on its loans. The system did not automatically limit the issue of notes (since more bonds might be bought), nor did it make them redeemable, but it made them safer and therefore more generally acceptable which made it less likely that they would be redeemed. This reform also had later imitations, principally in the National Banking System established in 1863.

Louisiana Banking Law of 1842

The Louisiana Banking Law of 1842 was an unusual example of sound banking principles which the banks of that state were re-

quired to observe. In brief, this law required the banks to keep a one-third specie reserve against notes and deposits. The remaining two-thirds of the liabilities had to be represented by commercial loans running for not more than 90 days. No bank could pay out the notes of other banks; hence when depositors or those repaying loans presented them to the banks they promptly sent them to the issuing banks for redemption. There was also an advanced system of state examination and reports which gave state supervision of the system. The results of these requirements were that banks were able to maintain redemption at all times and their notes circulated at parity with specie. The high reserve ratio prevented them from making excessive loans and issuing inflationary notes; the redemption system put a further brake on loans. Any loan made in the form of notes was relatively sure to cause a loss of specie promptly through redemption. These conservative measures allowed the Louisiana banking system to operate successfully until the Civil War, after which it eventually merged with the National Banking System.

State Bank of Indiana

The State Bank of Indiana should be mentioned as a unique and successful example of a bank established by a state as a banking monopoly.⁸ There were ten branches, with a home office from which the system was administered. The state purchased half of the stock, which amounted in total to \$160,000 for each branch. The management pursued sound banking policies, making loans cautiously and generally for short periods and for commercial purposes. This meant that note issues were not overexpanded. The management was held strictly accountable for the actions of the bank; all loans over \$500 had to be approved by a majority of the directors, who were liable for any losses incurred by the bank on illegal loans. After approximately twenty years of successful operation, the trend toward free banking throughout the country deprived the bank of its monopoly powers but it continued to operate successfully until it was superseded by the National Banking System.

⁸ Ohio and Iowa also for a while operated similar systems. Several other states owned banks that were not monopolies.

Summary

In summary, it might be said that the essential weaknesses of banks during the state banking period prior to 1863 were (1) inadequate capital, which meant that banks frequently did not have sufficient assets to match their liabilities, (2) unwise and excessive loans, which meant that losses were often incurred which left the banks insolvent and also led to (3) excessive note issues, through which medium the loans were made. This meant that the banks created obligations they could not meet and flooded the country with a most unsatisfactory currency. All the examples of better banking practice described above were designed to correct some or all of these weaknesses. They were far from completely successful, and in some instances contributed to the abuses. Free banking, for example, contributed to the growth of wildcat banks where charters were granted with little or no consideration of the need for the banks or their likelihood of success. The lack of regulation and supervision in general is illustrated by the fact that upon the establishment of the National Banking System only two states, Louisiana and Massachusetts, had laws requiring minimum cash reserves. The irksome bank-note situation and the possibilities for fraud caused a persistent reaction against banking as such.

On one ground or another, hostility to incorporated banks and to their issuance of notes had always been active. The state constitution of Iowa prohibited them from 1846 to 1857, when banking was made a state monopoly. The constitution of Texas, adopted in 1845, forbade the creation of any corporate body "with banking or discount privileges." In Illinois a movement to prohibit banks failed in 1847 by only a narrow margin. At various times, legislation in still other states reflected a distrust of banks and in particular of their note issue function, though neither the scope nor the effect of the measures is in all cases clear.⁴

⁴ *Banking Studies*, pp. 10-11. The reader may also find many interesting criticisms of banks in H. E. Miller, *Banking Theories in the United States before 1860*, Harvard University Press, 1927.

XIII

THE NATIONAL BANKING SYSTEM

THE DEFECTS of the banking system prior to the Civil War, described in the preceding chapter, might have led eventually to reforms imposed by the Federal government. As it happened, the war itself brought about such a reform, the establishment of the National Banking System, whereby the Federal government again entered the field of chartering and supervising banks.

Two interrelated purposes underlay the establishment of the system: (1) to reform the note system and more or less incidentally to correct the other defects of the state banks, and (2) to strengthen the market for government bonds as an aid in financing the war. Lincoln's Secretary of the Treasury, Chase, and Senator Sherman proposed a system of federally chartered banks modeled somewhat upon the Free Banking System of New York State. The banks were to be allowed to issue notes only upon the security of government bonds, and their purchases of bonds for this purpose would, of course, create a market for the issues the government was selling.

A National Banking Act was passed in 1863 setting up such a system, but few state banks entered it, so that only one year later a new act was brought forth which made membership more attractive.

It will be noted that by this time it was rather late to have much effect upon the problem of financing the war.

Provisions of the National Banking Act

The outstanding provisions of the act that should be noted for their influence on the later development of the banking system relate to capital requirements, the note issue, reserve requirements, and loans. At the time of passage, the problems of note issue doubtless received the most attention, but later problems focused increasing attention on the other provisions.

Capital Requirements

State banks could join the system by meeting, in general, the requirements laid down for newly established national banks. Banks could be established by showing the Comptroller of the Currency, whose office in the Treasury Department was established by the act, that there was a local need for a bank and by meeting the minimum capital requirements. These requirements varied for banks in cities and towns of different size on the theory that the amount of business done by the bank would be related to the population it served:

Population over 50,000	\$200,000
Population between 6,000 and 50,000	100,000
Population less than 6,000	50,000

For a time the law was amended to permit banks in towns of less than 3,000 population to be established with capital of \$25,000, but the amendment was later repealed, and the original capital requirements still apply. Banks could begin business with half of the capital paid in, the rest to follow in monthly installments. Furthermore, a stated percentage of earnings had to be retained until surplus amounted to 20% of capital. Hence, one reform was the requirement of adequate capital.

Note Security

Banks were required to deposit an amount of government bonds equal to one-third of their capital, or at least \$30,000, with the Secretary of the Treasury. They might then obtain from the Comptroller of the Currency national bank notes up to 90% (later 100%)

of the par value of the bonds. In no event, however, could they issue notes in excess of their capital. The total issues of all banks were further limited to an over-all \$300,000,000 at first, one-half of which was allocated to banks on the basis of population, the other half to be apportioned by the Secretary of the Treasury according to business needs. This sum was found to be inadequate as the business requirements of the country grew, and, after the limit had been raised, it was completely lifted in 1875.

The notes were redeemable by the issuing bank at its own counters and at redemption centers in certain cities in lawful money (specie or government money). With some exceptions the notes were legal payment to the government and by the government. By these requirements it was intended to prevent overissue of bank notes and to provide safety for noteholders. The notes were also intended to circulate at par with standard money because of their acceptance by the government and because each national bank was bound to accept the notes of any other national bank at par.

The national bank notes provided the country with its main type of paper money, and they continued to be used after establishment of the Federal Reserve System in 1913. In 1935, the last remaining government bonds carrying the "circulation privilege" were redeemed and the outstanding national bank notes became liabilities of the government, to be retired as they were withdrawn from circulation and sent to the Treasury. Occasionally one may run across a national bank note in circulation but they are not common and none is currently issued by the banks.

Reserve Requirements

The reserve requirements were particularly important to the later development of the American banking system. Banks normally had been carrying balances with other banks located in important money centers, such as New York. Such correspondent banks have been mentioned as depositories of primary reserves. It was customary to have some reserve funds deposited with city banks because drafts against them could be sold to customers needing funds in the money centers for business purposes. The National Banking Act recognized these interbank deposits in the following manner. New York City

was designated a "central reserve city," and banks located there were required to keep a reserve of lawful money in their own vaults amounting to 25% of their deposits and notes. Banks in sixteen other cities, which were called "reserve cities," also maintained 25% reserves, but one-half of the reserves could be in the form of deposits in New York banks. Other banks, called "country banks," were required to maintain 15% reserves, but three-fifths could be deposited with banks in reserve cities or New York City. Later, Chicago and St. Louis became central reserve cities, and eventually there were 49 reserve cities.

It will be observed that originally note issues and deposits had the same reserve requirements. This followed from the fact that both were obligations of the banks. However, the redemption of national bank notes presented no problems because of their safety, restricted numbers, and general acceptability, and in 1874 reserves were no longer required for notes. Instead, banks deposited with the Treasury a 5% redemption fund which could be counted as part of the reserves required for deposits. Although the banks were no longer required to maintain redemption centers at their city correspondents, the reserve requirements for deposits, allowing the use of correspondent balances, remained. Individual banks might, of course, maintain reserves in their own vaults for the possible redemption of notes, but there was no longer any legal requirement.

Loans

The restrictions on loans contained in the act provided a predominantly commercial banking system. For example, loans on the security of real estate were banned. Real estate in excess of that needed to carry on the business could not be acquired except as *bona fide* settlement of debts, and if so acquired had to be sold within five years. Later amendments, however, have not only permitted but encouraged such loans, particularly in an effort to stimulate construction in the 1930's. Earlier such permission appeared necessary to even up competition between state and national banks. It has been mentioned previously that loans could not be made on the security of the banks' own shares, nor in excess of 10% of capital and surplus (originally capital alone) to any one borrower.

Development

The restrictions of state laws, particularly regarding capital requirements, loans, and the issuance of notes, were generally less severe than the provisions of the National Banking Act. Hence, the development of the system by the inclusion of state banks which would be obliged to give up their state charters for national charters was impeded. In 1865, therefore, a Federal tax was levied on the circulating notes of state banks. This tax amounted to 10% per year and made note issue unprofitable. At the same time, the law was amended to permit state banks that had branches to join the National Banking System without disposing of their branches. As a result of these two measures, membership in the system began to grow rapidly. The growth of the banking system, as reported by the Comptroller of the Currency, is summarized in the following table.

TABLE 14
NATIONAL BANKS AND THEIR NOTES,
DEPOSITS, AND RESOURCES,
1870-1913
(dollar figures in thousands)

Year	Number	Notes	Deposits	Resources
1870	1615	\$291,800	\$ 501,400	\$ 1,500,000
1880	2090	317,300	873,500	2,100,000
1890	3540	122,900	1,600,000	3,100,000
1900	3871	283,900	2,500,000	5,000,000
1910	7173	674,800	5,100,000	9,800,000
1913	7509	727,000	6,000,000	11,300,000

Source: Comptroller of the Currency, *Annual Reports*.

The increase in banking resources within the system was eight-fold between 1870 and 1913, when the Federal Reserve Act was passed. The increased use of checks, as compared to notes, is shown by the increase in individual deposits from half a billion dollars to twelve times that figure, while the volume of national bank notes somewhat more than doubled.

The development of use of checks on a widespread scale also permitted the state banks to survive in spite of the tax that was in-

tended to drive them out of existence through abolishing their notes. State bankers were often reluctant to convert their banks to national banks in view of state laws that permitted them more leniency in operating branches, acting as trustees, making real estate loans, doing an investment banking business, investing in stocks, or in regard to capital and supervision. From about 325 banks in 1870, state banks grew in number to about 12,000 in 1910. State banks usually, however, were small country banks, so that although they were more numerous they owned not a great deal more resources than did the national banks. By the time of the Federal Reserve Act there were about twice as many state banks as national banks—over 7,000 national banks and over 14,000 state banks.

The competition of state banks has resulted in a general trend of relaxation of some of the requirements governing national banks. Alteration of the real-estate loan ban has been mentioned. In addition, national banks may be granted authority to act as trustees, and they have been granted lower reserve requirements for time deposits and the right to accept drafts drawn upon them. Some of the larger national banks adopted the device of affiliated state banks, through which they carried on businesses barred to them as national banks.

As the National Banking System developed, it appeared that the framers of the law had failed to provide the country with an ideal system. In some ways, it was a great improvement. Bank-note issue, for example, was for the first time uniform throughout the country and safe. People could forget the difficulties of the old situation when every note had to be examined and considered before being accepted; losses from unwittingly taking depreciated or worthless notes disappeared as far as the issues of the national banks were concerned, and the issues of state banks were driven from circulation. The capital requirements, too, were an improvement and were a factor in keeping banks solvent, although there were still more failures than should occur in a good system. When banks did fail, however, losses did not fall on the noteholders because the notes were guaranteed by the government. The government, in turn, reimbursed itself from the bonds deposited with it and, if necessary, from a prior lien on the banks' remaining assets.

Defects of the National Banks

In other respects, the system was not so noteworthy. The defects of the system may be listed as (1) the system of clearing and collecting checks, (2) inelasticity of notes, (3) inelasticity of deposits, and (4) periodic bank failures. All four are, of course, related to each other. Two and three can be lumped together as the inelasticity of bank credit, and they in turn largely explain the fourth defect.

Clearing and Collection

The clearing and collection system was defective in that checks were not cleared promptly nor at par. These things meant handicaps to business and fictitious reserves for the banks. An example will illustrate. A depositor of a bank in town A would deposit a check he had received from a person in town B. Bank A could not collect the check at par from Bank B, as explained in Chapter VII, because Bank B would make an exchange charge for sending the currency. Since Bank A would wish to credit its customer with the amount of the check deposited, it would seek ways of avoiding the exchange charge. It could use the check to build up its deposit at a city bank where it would be credited at par because the city bank wanted the deposit. Then the city correspondent bank would avoid the charge if possible by sending the check to another bank where it wanted to build up a deposit or where it owed money. In this way the check might circulate for several weeks until it returned to Bank B, possibly at par, through another bank located in town B. All this time Bank A was counting its deposit at its correspondent as part of its reserves, and so on through the system. Bank B, in the meanwhile, was ignorant of the existence of the check, and had no reason to reduce its depositor's account or its reserves available.

The receiving bank, Bank A, might have credited the depositor only with the amount it would realize on the check, probably less by from 10¢ to \$1.00 per \$100, but the competition among banks for deposits usually made this impossible. Further, Bank B might have paid Bank A, not by sending currency, but merely by sending its check drawn against a city correspondent. When the exchange charge was avoided, this method was often followed, although the charge might still be added in this case as well. Its drawbacks were that Bank B

had to maintain city funds for the purpose (one explanation for the charge), and Bank A might then have to withdraw funds if it wanted currency.

In spite of these defects, the exchange charges were an immediate source of income to the banks and consequently they resisted efforts to eliminate them. The system was slow, costly, and, by creating fictitious reserves, inflationary; but it persisted until the Federal reserve banks managed to eliminate it.

Inelasticity

This defect of the clearing process was not so serious nor so underlying as the faults of the notes and deposits, which were a large part of the money supply of the country. Before touching upon these directly, some observations on the source of the money supply itself are in order. It has already been pointed out that bank credit, in the form of notes or deposits, is supplied by the banks through the making of loans. The volume of bank loans rises during periods of

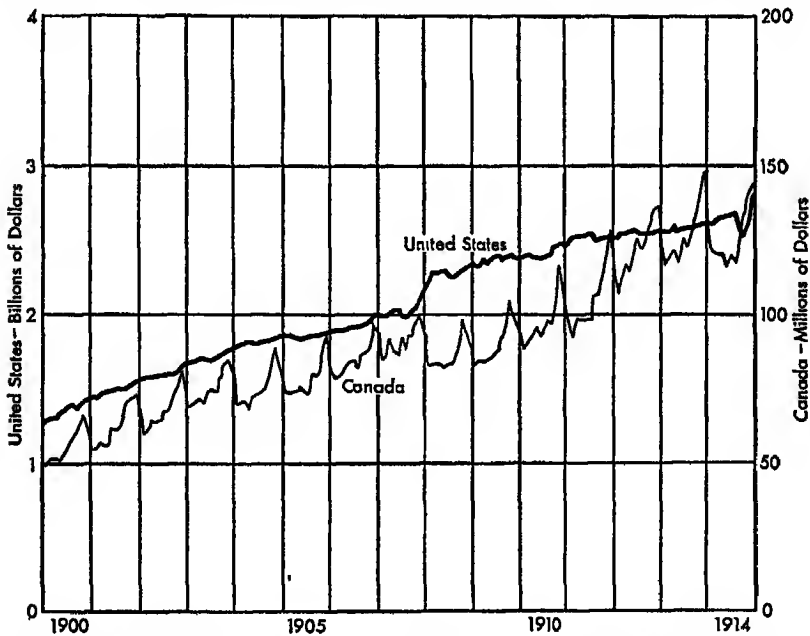


FIG. 10.—Paper Money in Canada and the United States, 1900–1914. (Adapted from W. R. Burgess, *The Reserve Banks and the Money Market*, Harper and Brothers, 1936, p. 80.)

increased business activity, seasonally throughout the year and cyclically from year to year. During active seasons, these loans give rise to more deposits and notes, which, after being spent, circulate in business transactions. The busy seasons, influenced by agricultural pursuits, are the spring and fall when crops are planted or harvested. The fall season is also preparatory to the Christmas rush. Other businesses fall into the pattern impressed by the seasons; most lines of activity are slacker during the hot summer months and in winter after Christmas.

Suppose the owner of an apple orchard begins to hire pickers and buy crates and boxes during the fall. If he needs a bank loan to finance these peak activities until he has sold the apples, he will give his bank his promissory note to repay a certain amount in, say, 90 days, and he will receive the discounted amount of his note as a deposit. Some of this he may withdraw immediately in notes of the bank, assuming it can issue notes as national banks could, so that he may pay his pickers in cash. The rest he will spend by check.

As was pointed out in Chapter V, the bank will be unable to make this loan, desirable as it might be, if it does not have any excess reserves to lend. This was just the situation that sometimes prevailed. Since banks were allowed to send part of their reserves to city banks where they earned interest, they were inclined to do this as far as possible. When business activity was light in their localities so that they had excess reserves, they could still get a return from these funds by depositing them with their correspondents. When their own customers needed funds they could bring these excess reserves home. More specifically, they could make loans and then, to the extent they lost reserves to other banks, they could remit to the other banks by check against these interbank deposits.

There were two reasons why the banks could not function well to furnish this seasonal change in the supply of money. The first is the circumstances of the note issue; the second the system of reserves against deposits.

The fact that national bank notes were issued upon the security of government bonds set a rigid upper limit on the amount of notes that could be issued. Further, the banks were limited in their note issues to the amount of their capital. Neither their capital nor the volume of government bonds bore any relationship to the volume of

hand-to-hand money needed. If the banks had already issued as many notes as were allowed, there was no "elasticity" left. On the contraction side also, there was little tendency that banks retire notes in the off seasons. Once the notes were issued, they tended to circulate and might not return to the issuing bank for months. Even if they did return, the bank would prefer to pay them out again to meet withdrawals rather than to pay out other money that could be counted as reserves. As a result, when bank customers did want hand-to-hand money in increased volume, like the apple grower mentioned above, they withdrew bank reserves. This in turn reduced the banks' ability to make further loans of either notes or deposits just when the demand for loans was likely to be greatest.

The price of government bonds further complicated the situation. Since the bonds sold at a substantial premium, a bank would have to give up more than \$1,000 in order to issue bank notes of that amount. The bank might thus just as well pay out or lend the funds with which it might buy the bonds. The yield on the bonds would be low and local loans would ordinarily return a higher rate. Most bankers therefore found it to their advantage to hold the required amount of government bonds and not increase and decrease it in order to vary their note issue.

Secondly, the system of redepositing reserves tended at times to break down. Carried to its mathematical extreme, the system would allow a country bank whose deposits were \$100,000 to keep \$6,000 of lawful money in its own vaults and \$9,000 in reserve city banks. The reserve city banks could lend three-fourths of this, and keep a 25% reserve. This reserve, however, could be split, half cash in vault and half sent to central reserve cities. The \$2,250 reserve would consist of \$1,125 in lawful money and \$1,125 in the correspondent bank. The central reserve city bank could lend \$843.75 out of this and keep a 25% reserve of \$281.25. Thus, the various banks would show on their books reserves totaling \$17,531.25, as follows:

	<i>Deposits</i>	<i>Reserves</i>	<i>Cash</i>	<i>Redeposited</i>
Country bank	\$100,000	\$15,000	\$6,000	\$ 9,000
Reserve city bank	9,000	2,250	1,125	1,125
Central reserve city bank ..	1,125	281.25	281.25	.....
	<u>\$110,125</u>	<u>\$17,531.25</u>	<u>\$7,406.25</u>	<u>\$10,125</u>

The actual cash reserves supporting the structure would amount to only \$7,406.25, or 6.7% of the total deposits. Actually, the country bank might deposit its reserves directly with a central reserve city bank, or deposit parts in both categories of cities, which would change the arithmetic involved, but not the principle.

When the seasonal demand for loans arose, the country banks would demand payment. Normally, they would anticipate their needs as would the city banks, which would then be able to send the funds. However, at times the city banks could not meet these withdrawals. This situation necessitates a consideration of the use by city banks of the funds deposited with them.

Brokers' Loans

City banks could use these funds for any legal type of loan or investment, but since they were the deposits of banks which would probably want to withdraw them within a short time, the city bankers chose call loans, which were supposed to be extremely liquid. Loans were made to brokers, who in turn lent them to customers for the purpose of buying or carrying securities. When the banks wanted the funds, they called the loans and the customer either was asked to pay by the broker or the broker got a loan from another bank. If all of the banks, however, were seeking funds to remit to the interior of the country, brokers would have difficulty getting new loans. At the least, interest rates would rise; at the most, loans would not be available. In these circumstances, the securities would be sold; but again, if this were widespread, security prices might break sharply, and sufficient funds might not be realized.

In any event, as has been pointed out before, if all of the banks called loans in order to increase their reserves, they would merely gain reserves from each other. If a customer pays a loan with a check on the lending bank, that serves only to reduce the deposits. It raises the reserve ratio in this way and thus may create some excess reserves, but it does not increase the amount of the reserves. If the customer pays by check on another bank, the lending bank will gain reserves from the other bank. Again, however, if both banks are repaid loans by checks drawn against each other, they lose reserves to each other. Their deposits are reduced and their reserve ratios are raised, but except for the excess reserves created by the reduced

volume of deposits needing reserves they have not improved their situation. If, to speed up the process they try to sell some of their investments in order to get checks on other banks, the same thing happens; each bank gains only at the expense of others, and at the same time they lose to others. When these situations arose, the city banks were unable to raise the excess reserves needed by the country banks, and they suspended specie payments.

Monetary Stringency

A simple solution might seem to be that the banks dip into their "required" reserves, and allow their reserve ratios to fall below 25%. In fact, this occasionally happened, but in general the banks preferred to maintain their legal requirements and suspend payments. As a matter of fact, the 25% reserve requirement was not rigid in the sense that it could not be breached; the requirement was that no loans could be made or dividends paid while reserves were below that figure. Although the New York banks did ship the required reserves in the panic of 1873, their later attitude was in favor of maintaining the ratio and suspending specie payments.

TABLE 15

AVERAGE MONTHLY RECEIPTS AND SHIPMENTS
OF CASH BY NEW YORK BANKS, 1905-1908
(millions of dollars)

	Shipments	Receipts
January	33.0	114.3
February	32.1	47.8
March	47.0	54.0
April	65.2	64.9
May	35.5	68.7
June	37.5	64.2
July	38.9	53.7
August	69.2	36.5
September	88.5	25.8
October	109.5	30.4
November	87.4	31.3
December	78.4	57.3

Source: E. W. Kemmerer, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*. National Monetary Commission, 1910, pp. 77-79.

In any event, there would be a period of great monetary stringency because the city banks would be reducing their loans and not making loans. Businesses needing loans for their normal operations would be unable to obtain them and might become bankrupt. In 1873, 1893, and 1907 there were "panics" of this kind, during which both bank failures and business failures resulted.

Another solution would appear to be for the city banks to have kept at all times excess reserves over and above their required ones. They could have allowed their reserves to pile up when country banks sent them and then paid out these excess reserves when they were called for. This would have required far more altruism on the part of the banks than could be expected. Like any other bank, the city bank wanted the deposits in order to lend the funds at interest. Public-spirited as their managers might be, the function of their banks was to make a profit, and this could not be done with idle money. The tendency, then, was that the depository banks usually be "lent up." The seasonal outflow of funds from the monetary centers usually could be managed by liquidating loans there, with some monetary stringency, and the occasional panics were looked upon in somewhat the same way as people who live near by look upon volcanoes. An eruption might happen, and measures should be taken to get away safely if it does, but in the meantime there is a living to be made.

It follows that during these periods the country banks would be unable to make the loans demanded of them because they could not get the reserves to lend. The apple grower we used for illustration might not be able to hire his pickers or pay for his crates, and the defects of the banking system might be responsible for his losing his business. This lack of elasticity of the volume of loans and deposits, leading to numerous business and bank failures, was the basic defect of the system.

Emergency Measures

The periodic breakdown of the National Banking System created several emergency palliatives that were created to tide the banks and business community over the stringencies of bank credit. These pointed the way to more fundamental reforms to be adopted later in the Federal Reserve System. Those primarily worth men-

tioning in this connection are the steps taken by the clearing houses and by the Treasury, and the Aldrich-Vreeland Act.

'Clearing House Loan Certificates

The New York Clearing House provided an early means of alleviating the shortage of reserves during banking crises when it issued loan certificates. These later became widely used in the panics of 1873, 1893, and 1907. When a member of a clearing house had an

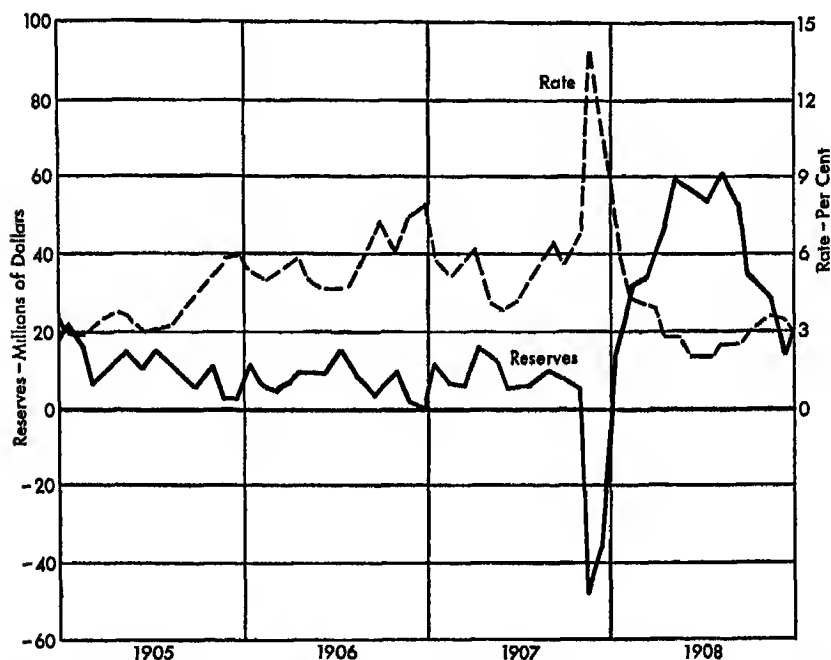


FIG. 11.—90-Day Stock Exchange Loan Rate and New York Bank Reserves, 1905-1908.

unfavorable balance and payment of the balance would deplete its required legal reserves, it could turn over to the clearing house acceptable securities or promissory notes as collateral for a loan. On this collateral the clearing house issued loan certificates with which it paid the banks having favorable balances. The certificates bore interest and were simply a device whereby the banks could meet adverse balances without the use of legal reserves. In effect, the same

thing would have been accomplished if the banks with favorable balances had taken securities in settlement from the other banks, or bought them. The clearing house loan certificate was acceptable to the banks with favorable balances since if the banks later had unfavorable balances they could be passed on to still other local banks. They were assurances that banks receiving them at one time might be able to borrow in the same way in time of need. When reserves again flowed to New York the banks owing the clearing house would redeem their collateral and the clearing house would redeem its certificates.

The loan certificates were not of direct help in nonlocal clearings in that drafts by out-of-town banks could not be met with them. The fact that local balances could be met thereby did permit city banks to remit that much more reserves to the country banks, however.

Another device created by the clearing houses was scrip, which was intended to circulate as currency. The scrip was similar to the loan certificates but was issued in small denominations and engraved to resemble notes. Banks which took scrip in payment of favorable clearing house balances could pay it out over their counters to meet demands for cash. During the banking panics this device permitted the public to have hand-to-hand currency while lawful money was tied up in required reserves. Although the loan certificates and the scrip were not legal reserves, it may be noted that they did succeed in providing means of payment and permitted banks to turn their assets into these means of payment. Although they were of limited use, to this limited extent they were money and eased the strain on the fixed volume of reserves when they were used.

Treasury Operations

The establishment of the Independent Treasury was noted in the preceding chapter in connection with the state banking era. After 1846 the Treasury found it more and more inconvenient to handle all of its transactions in specie and resorted more and more to use of bank deposits and reliance on the banking system for the transfer of funds. Nevertheless, the Independent Treasury and subtreasuries remained in existence and periodically drained money out of the banking system when payments were made to the government and pumped it back when expenditures were made. The effects of these

operations were obvious, and the various Secretaries of the Treasury attempted to offset the problem of loss of reserves that was created for the banks. Even prior to the Civil War the Treasury had adopted two simple means of accomplishing this. In the first place, it was simple to deposit government money in banks, thus replenishing the reserves that had been withdrawn. Unfortunately, the depository banks might not be the ones most in need of reserves. A second device was that the Treasury purchase government bonds for retirement with its surplus funds. This device returned reserves to the banks either because the banks themselves sold the bonds or because investors sold their bonds and deposited the money in banks. These actions by the Treasury were taken both when heavy payments to the government created shortages of specie or when seasonal or other demands for loans required more reserves. However, it should be emphasized that the Treasury could not return more reserves to the banking system than it had previously taken out; there could be no net addition to the total reserves.

The Aldrich-Vreeland Act

The devices of the clearing house and the Treasury stimulated discussion of the need for reform of the banking system and pointed up the necessity for a central bank that could actually provide additional legal reserves when needed. In the meantime another stop-gap measure was taken in the passage of the Aldrich-Vreeland Act in 1908, following the banking panic of 1907. The example of the clearing house certificates was the basis for this legislation, which provided that national banks could band together in groups of ten or more for the purpose of issuing emergency currency. Such associations of banks could pledge securities with the Secretary of the Treasury and receive in exchange emergency notes up to 70% of the market value of the securities, or 90% in the case of municipal bonds. The notes were subject to a 5% tax graduating to 10% per year if the notes were outstanding as long as six months to insure that they would be retired as soon as the banks could do so. The banks were jointly liable to the Treasury for the repayment of the notes, for which the collateral was pledged.

The similarity of this scheme to the national bank notes themselves and to the clearing house certificates is apparent. This plan

merely extended the monetization of government bonds to other securities as an emergency measure. This act expired in 1914 following passage of the Federal Reserve Act, but it was used in that year as a result of heavy withdrawals of cash coinciding with the outbreak of World War I. Several associations of banks were formed and nearly \$400,000,000 of emergency currency was issued. The importance of the measure can be seen in the fact that this was half as much as the amount of national bank notes in existence at the time.

XIV.

THE FEDERAL RESERVE SYSTEM

CRITICISM of the operation of the banking system was stimulated by the banking panic of 1907. The banking situation became one of the major topics of the day, and was studied by many groups in banking, business, government, and academic life. A National Monetary Commission was established, which thoroughly analyzed the weaknesses of the existing system and made recommendations for reform based upon foreign practices and theoretical considerations. The net result was the introduction of a bill to establish a central bank. Opinion in Congress differed, some members favoring a strong central institution and others fearing to place great economic powers in one central bank. The Democrats for the most part were among the latter group, and, after the election of Wilson in 1912, their opposition eliminated the chances for the establishment of a single central bank.

One of President Wilson's first messages to Congress concerned pending legislation, which resulted in the establishment of the reserve system. The argument for reform is illustrated in this quotation:

We must have a currency, not rigid as now, but readily, elastically responsive to sound credit, the expanding and contracting credits of everyday transactions, the normal ebb and flow of personal and corporate dealings. Our banking laws

must mobilize reserves; must not permit the concentration anywhere in a few hands of the monetary resources of the country or their use for speculative purposes in such volume as to hinder or impede or stand in the way of other more legitimate, more fruitful uses. And the control of the system of banking and of issue which our new laws are to set up must be public, not private, must be vested in the government itself, so that the banks may be the instruments, not the masters, of business and of individual enterprise and initiative.¹

The characteristics of the proposed system are significant, of course, in the light of the defects of the National Banking System. The President's reference to "legitimate" and "fruitful" uses of funds will be found important as we touch upon the policies followed by the Federal Reserve System.

Purpose and Organization

The nature of the new banking system may best be realized by considering it in relation to the defects of the previous system. The fundamental idea of a central bank is that it holds the reserves of commercial banks. These banks maintain deposits in the central bank in the same way that individuals and business concerns maintain deposits in commercial banks. Just as deposits enable a commercial bank to make loans to its customers, by providing it with reserves, unless the deposits are newly created by lending, so do deposits enable a central bank to make loans to its customers, the banks. The fundamental difference between a central bank and other banks is that a central bank presumably is not primarily a profit-making institution; hence it does not ordinarily lend all it can, but rather maintains excess reserves. In this way, it is able to expand its notes or deposits and lend to the banks when they are in need of more reserves. This need may be the result of (1) loss of reserves through withdrawals of cash, or (2) increased reserve requirements in order to meet the demand for more loans on the part of business customers.

These characteristics differentiate a central bank from the correspondent banks of the National Banking System. Although the city banks did hold reserve balances for the country banks, they could not be considered central banks because their operations were dominated by a regard for profits and hence they did not normally carry excess reserves. These were the defects which were largely responsible for

¹ *Address to Joint Session of Congress, June 23, 1913.*

the occasional failure of the banking system to function. Furthermore, the correspondent banks had no legal authority or actual power to enforce their policies upon the remaining banks of the system, as a central bank is assumed to have. The correspondent banks were merely commercial banks that performed some central bank functions, while still other functions were performed by the Treasury or not at all. The beginning point, then, is that the reserve banks were established primarily for the purpose of centralizing the reserves of the banking system and facilitating the extension of loans to member banks when they needed more reserves.

Organization

In spite of the opposition to a single central bank, the system which was established, pursuant to the Federal Reserve Act of 1913, differs only in detail and organization from a central bank. Rather than one bank there are twelve, each located in a *Federal Reserve District* of sufficient financial importance to warrant a central banking institution. Several of the twelve banks have branches to facilitate their operations in areas some distance from the city of the reserve bank.

The Board of Governors

Centralization of the system is accomplished through a top supervisory board called, since the Banking Act of 1935, the Board of Governors of the Federal Reserve System. The seven members are appointed by the President for 14-year terms, which are so arranged that one term expires every two years. The Board is vested with general supervisory powers over the reserve banks and the member banks and with general responsibility for the policies guiding the operations of the twelve reserve banks.

The Open Market Committee

One of the principal operations of the Federal reserve banks, in its effect upon general credit conditions, is the purchase and sale of government bonds and other obligations in the open market. These purchases and sales are called the *open-market operations* of the system. The importance of open-market operations has led to the establishment of an Open Market Committee that is responsible for the policies guiding such operations. The Open Market Committee

is composed of the seven members of the Board plus five members selected by the reserve banks. These five are selected in such a way that they represent the banks grouped as follows :

1. New York
2. Boston, Philadelphia, and Richmond
3. Cleveland and Chicago
4. Atlanta, Dallas, and St. Louis
5. Minneapolis, Kansas City, and San Francisco

The Federal Advisory Council

The present law also recognizes a Federal Advisory Council, which consists of one delegate from each reserve bank. The Council meets with the Board of Governors at least four times a year, to consult about business and banking conditions throughout the country and to make recommendations. Its function is thus purely advisory.

The Reserve Banks

Each reserve bank is managed by a Board of Directors consisting of nine members. These nine directors are made up of three groups representing different interests. Group A directors are generally representatives of banks, or bankers; Group B directors must be engaged in business, agriculture, or commerce; Group C directors are chosen by the Board of Governors to represent the interests of the public in general. The member banks elect the Class A and B directors in a manner that recognizes banks of different sizes. The member banks of the district are grouped as small, medium, and large, and each size group elects one Class A and one Class B director. The Board of Directors in turn selects the president and other operating officials of the bank, although the president is subject to the approval of the Board of Governors. The administration of each reserve bank is independent in matters pertaining only to its district, but subject to the Board and the Open Market Committee in general policy matters.

The limited profit nature of the reserve banks is apparent from the rules of their organization. They are owned by the member banks themselves. Each bank was to buy stock of its reserve bank equivalent to 6% of its own capital and surplus, but only 3% has ever been

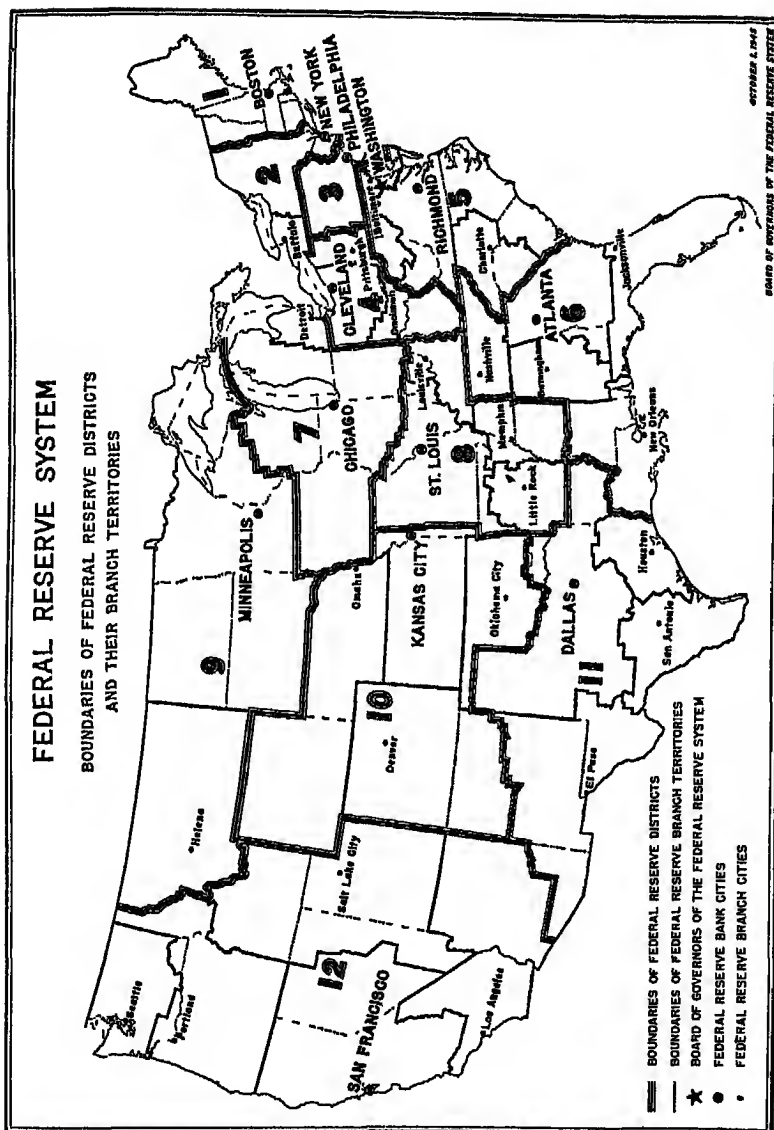


FIG. 12.—Map of Federal Reserve Districts.

called. The stock was limited to a dividend of 6% per year. Any further earnings were to be divided between the government as a franchise tax and the reserve banks themselves as surplus. Later amendments required that substantially all extra earnings be retained in the business of the reserve banks (carried to surplus). As a result, there is minimum pressure upon the reserve banks to earn profits for their stockholders; thus they are free to utilize or hold idle their excess reserves as national policy dictates.

The Member Banks

All national banks are required to be members of the Federal Reserve System, and state banks may join by meeting the requirements set up for national banks, provided their admission is approved by the Board of Governors. Many state banks have been reluctant to join for various reasons. In 1945 roughly half the commercial banks in the country were members, and half were not. However, the non-members are generally small country banks, so that the system does embrace a dominant majority of the deposits and assets of the banks of the country. In 1945 member banks held approximately \$106,000,000,000 of the \$124,000,000,000 deposits of all commercial banks.

Reserves

As is obvious from the description of the nature of central banks above, the Federal Reserve System inaugurated important changes in the nature of bank reserves in this country. This point involves a consideration of the reserves of the member banks and of the reserve banks themselves, and later a consideration of the uses to which the reserve banks put their reserves.

Member Bank Reserves

Required reserve ratios for member banks were amended somewhat by the Federal Reserve Act. The distinction between country, reserve city, and central reserve city banks was maintained, but the amount of minimum reserves was reduced on the theory that, with loans available from the reserve banks in time of need, banks did not need as high reserves. Originally the reduction was to 12%, 15%, and 18% of demand deposits in the different locations. A dis-

inction was introduced between demand deposits and time deposits, and a 5% reserve was required for the latter in recognition of the fact that such deposits are not checked out, and that they "turn over" slowly. As in the preceding legislation, the reserves were to be kept partly in the banks' vaults and partly at the reserve banks. A three-year period was allowed the banks in which to transfer their reserves to the reserve banks.

Before the system was in full operation, however, the credit stringency accompanying World War I emphasized the desirability of centralizing gold, and bank reserves in general, in the reserve banks. Hence, in 1917 it was required that all legal reserves be maintained at the reserve banks; the percentages were reduced to 7%, 10%, and 13% for demand deposits and 3% for time deposits. These percentages remained in force until 1935, when the Board of Governors was given authority to increase them up to double the statutory figures. At that time member banks were enjoying unprecedented excess reserves which, it was feared, might lead to excessive loans.

A simplified ideal balance sheet of the reserve bank of a district and those of three banks representing the three types of banks classified by location will illustrate the results of this depositing of reserves. Suppose that each of these three banks has total demand deposits of \$100 and time deposits of an equal amount, and that each has no excess reserves. The balance sheets will read:

	<i>Country Bank</i>	<i>Reserve City Bank</i>	<i>Central Reserve City Bank</i>
Assets			
Reserves	\$ 10	\$ 13	\$ 16
Earning assets	190	187	184
	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>
Liabilities			
Demand deposits	\$100	\$100	\$100
Time deposits	100	100	100
	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>

The required reserves of the country bank consist of 7% of its demand deposits, and 3% of its time deposits, and the reserve ratios of the others are similarly calculated according to the requirements

contained in the act prior to discretionary changes made by the Board. Actually, each bank would also carry a small percentage of its deposits as vault cash to meet discrepancies between day-to-day deposits and withdrawals of cash as well as at least a working balance at the reserve bank or correspondent.

Reserves of the Reserve Banks

The corresponding balance sheet of the reserve bank would show:

<i>Assets</i>		<i>Liabilities</i>	
Cash	\$39	Deposits	\$39

In their turn, the reserve banks were required to keep minimum reserve ratios of 35% in gold or lawful money against deposits and 40% in gold against notes. In June, 1945, these ratios were reduced to 25% for both notes and deposits and the reserves were required to be gold certificates.² In the above situation, the reserve bank could lend the member banks reserve deposits of, for illustration, another \$39. Its deposits would then be \$78 and its earning assets \$39, while its reserve ratio would be 50% (assuming the \$39 cash to be gold). This illustrates the extent to which bank reserves might be increased, as the additional deposits would be reserves of member banks. If the banks withdrew Federal reserve notes to the amount of this loan, the liabilities would consist of deposits, \$39; notes, \$39. These figures are, of course, ridiculously small, but they can be thought of as millions, and they do illustrate the principle involved.

Loans to Member Banks

The framers of the Federal Reserve Act were impressed with the desirability of commercial banks confining their loans to short-term, self-liquidating commercial or industrial loans. They therefore provided that banks could borrow from the reserve banks principally by rediscounting *eligible commercial paper*. In this way reserve bank credit supposedly would be extended only to those banks that needed reserves because of their expanded volume of business loans. To *rediscount* means to discount again. The loan made by the bank to the businessman is a discount; his promissory note is discounted by the bank. This provision permits the bank to turn over the promissory note to the reserve bank at its rate of rediscount; in other words,

² Gold certificates were substituted for gold in 1934, as explained in Chapter XXVII.

to sell the note to the reserve bank. Trade acceptances are also eligible commercial paper. The reserve banks also stand ready to purchase bankers' bills at attractive rates, not only because they correspond to the test of eligibility, but because the banks have been anxious to encourage the use of bills.

The requirements for eligibility, laid down by the original act, were that notes, acceptances, or bills must arise from actual commercial transactions and mature in not more than 90 days. An exception was made for agricultural paper, owing to the longer cycle required in raising crops or livestock; such loans might run for six months. Paper representing loans to purchase or carry securities, regardless of maturity, was not eligible. Exceptions were paper arising out of loans to purchase or carry government obligations and loans secured by government bonds. Ninety-day paper financing exports or imports was also eligible.

As a matter of convenience, rediscounts have given way to direct loans secured by rediscountable paper (or government securities). When a bank obtains funds by rediscounting several notes of its customers, notes must be picked out that add up to the sum it wants to rediscount, and a separate calculation of the discount must be made for each note, based upon the number of days to its maturity. It is simpler to borrow directly and to secure the loan from the reserve bank by the deposit of a bundle of promissory notes or other paper.

Eligibility and Elasticity

The theory of eligibility was part and parcel of the attempt to provide the elasticity so lacking in the National Banking System. If a country bank ran out of excess reserves as a result of making seasonal loans to its customers, it automatically obtained the paper by which it could borrow more reserves from its reserve bank. Contraction of credit was equally provided, in that when business activity subsided the loans were repaid. The method of repayment usually took the form of the reserve bank returning the rediscounted note to the borrowing bank for collection, and the borrowing bank remitting to the reserve bank. One reason for this method, rather than the reserve bank collecting directly, is the reluctance of banks to let their customers know they have borrowed.

The results of these transactions as shown on the balance sheets of the local banks and the reserve bank should be noted. In the first

place, the reserves of the banks are shown as "deposit at reserve bank." As a bank makes more loans, it will probably lose reserves to other banks through the clearing process. Briefly, as we have seen, a bank receiving a check for deposit sends it to the reserve bank for collection. The reserve bank credits the amount of the check to the account of the recipient bank, charges the account of the bank on which it is drawn, and sends the check home to the latter. As a result of making more loans, then, a bank shows an increase in earning assets and a decrease in reserves. To the extent that many banks are making loans, they may all receive deposits of checks drawn on each other and may lose reserves to each other, so that they do not, as a system, lose reserves. They do need more required reserves, however, to match the increased deposits. Hence, a bank whose reserves at the reserve bank dip below the required ratio may restore them by rediscounting. This might best be illustrated as a decline in earning assets matched by an increase in reserves. As a matter of accounting, however, banks show the rediscounts as liabilities, because they are contingent liabilities of the banks. That is, if the borrower defaults, the bank would have to repay the loan to the reserve bank anyway. The additional reserves are therefore balanced by the additional liability.

The increased lending of the banks does not affect the balance sheet of the reserve banks until rediscounting takes place. That is, the reserve bank may shuffle its deposits about among its depositing member banks as a result of the circulation of checks, but the banks still own the same total of reserve deposits. When a rediscount is made, the reserve bank adds the paper to its earning assets and credits the bank with the amount of the rediscount, thus increasing the deposits of the reserve bank and the reserves of the member banks.

Elasticity of Notes

It will be recalled that under the National Banking System bank notes were inelastic. The need for additional hand-to-hand money at times reduced the reserves of banks because they could not issue and pay out more notes. This problem was solved in practically the same way as that of bank reserves. The reserve banks were given the authority to issue notes, and their credit in this form is required to

have the same type of reserves and security as when in the form of deposits. The reserve banks at first were required to have a 40% gold reserve, plus an amount of commercial paper equal to the issue. These requirements have been altered several times, as we will see. Thus the original intention was that the local banks could rediscount eligible commercial paper and either take the proceeds as a reserve deposit or withdraw them in the form of Federal reserve notes. Thus, whether the increased need for money resulting from greater business activity was reflected in greater bank deposits or note circulation—or both—the reserve banks automatically came into possession of the commercial paper which allowed them to extend credit in either fashion. Assuming they had ample gold reserves, the reserve banks could use the discounted paper as collateral for the issuance of more notes as demanded by the member banks.

The Federal Reserve Act also provided for Federal reserve bank notes, which were similar to the national bank notes since they were issued on the security of government bonds. They were provided to take the place of national bank notes, which were being retired, until the Federal reserve notes should come into full use as the principal type of paper money. Federal reserve notes were so quickly adopted, however, that the reserve bank notes were not much used. The member banks soon rediscounted sufficient paper to allow the reserve banks to issue the reserve notes. Reserve bank notes were discontinued in 1945.

Emergency Elasticity

There is another type of need for hand-to-hand money that does not correspond to changes in business activity. In fact, it is more likely to bear an inverse relationship. That is the need to pay out cash to depositors who are withdrawing funds in fear of bank failures. The cash is withdrawn for hoarding. These withdrawals, of course, do not give the banks any eligible paper, as they are not related to loans. The existence of this need for hand-to-hand money, as will appear from the later outline of the history of the Federal Reserve System, has led to the almost complete breakdown of the eligibility principle. In its place has come *acceptability*, meaning that the reserve banks may lend to the banks on the security of any paper acceptable to the reserve banks.

Acceptability was necessary prior to the emergency legislation changing the requirements, but in a somewhat different sense. The early history of the reserve system (for example, during the 1920's) has many examples of disputes between member banks and reserve banks over the question of whether the reserve banks were bound to rediscount eligible paper when requested or whether they could refuse to accept it. The reserve banks usually maintained that paper not only had to be eligible in the sense of meeting the requirements of the law, but also acceptable to the reserve bank: that is, paper such as a promissory note or other obligation of a borrower in good credit standing. To determine this question the reserve banks applied the same standards as any conservative banker in deciding whether to grant credit. Since the emergency legislation the reserve banks have authority to accept paper for rediscount that is not eligible but in their opinion is "sound." However, these changes in principle in a sense have made the volume of reserve notes more elastic. In an emergency, practically all of the deposits of banks could be withdrawn, and the banks could obtain, by borrowing on their assets, sufficient Federal reserve notes to meet the drain.

Clearing and Collection

The reform of the clearing and collection system was a major contribution of the Federal Reserve System. The essentials of clearing and collection have already been described in connection with bank reserves and need not be repeated here. The Federal reserve banks have provided a clearing system for out-of-town banks similar to that which the clearing house provides for banks located in the same town. This development followed naturally from the deposit of reserves with the reserve banks.

Intradistrict Clearing

A bank which receives a check drawn on another bank *could* demand currency; the drawee bank *could* withdraw currency from the reserve bank and send it to the receiving bank, which might then redeposit it at the reserve bank. Or the drawee bank might send the receiving bank a check drawn against its reserve account, which the receiving bank might then use to build up its balance at the reserve bank. Obviously the procedure would be much simpler

if the receiving bank should send the check which has been deposited with it to the reserve bank for collection. The reserve bank would credit its reserve account with the amount of the check, and deduct the same amount from the reserve account of the drawee bank. Actually, the mechanism of such a transaction may differ in different reserve districts. The following possibilities illustrate how intra-district checks may be cleared.

Prior to the so-called county clearing plan in use mostly in the New York District, a check deposited in Bank A was sent to the Federal reserve bank, which granted a deferred credit to Bank A. The reserve bank then sent the check to Bank B, on which it was drawn. Bank B in turn remitted with funds at its disposal, which might be a draft on its reserve balance, a draft on a correspondent, or currency. The reserve bank then credited Bank A for the check. Under the county clearing plan, Bank A sends the check directly to Bank B and merely mails advice to the reserve bank that it has done so. The reserve bank then credits the account of Bank A and debits the account of Bank B. This transaction takes one day whereas its predecessor took three.

By still another method a country bank sends to a correspondent all the checks it has received drawn on banks in the city of the correspondent and at the same time draws a draft for the same amount on the correspondent. The country bank sends the draft to the reserve bank, which credits it with the amount involved and debits the correspondent bank. The latter meanwhile is collecting the local checks through the clearing house.

Of course, at the base of these transactions are the debits and credits to depositors' accounts at the commercial banks. Mr. A receives a check drawn by Mr. B on Bank B, and deposits it in Bank A. Bank A credits the amount to his account and sends the check, with others received on out-of-town banks, to its reserve bank, or otherwise as described above. When Bank B gets the check, directly or from the reserve bank, it charges the account of Mr. B. In this way the bank deposit of Mr. B has discharged an obligation to Mr. A, and has moved to Bank A, and Bank B has lost reserves to Bank A. On any given day Bank A both will lose reserves in this way to the banking system and will gain reserves from the banking system, the reserves being the banks' deposits at the reserve banks.

Interdistrict Clearing

When the drawer and drawee of a check^u are in different reserve districts, two reserve banks and the Interdistrict Settlement Fund are involved. When the receiving bank sends such a deposited check to its reserve bank, the latter sends it to the reserve bank of the bank on which it is drawn, and grants a deferred credit to the depository bank. The other Federal reserve bank, of course, sends the check to the drawee bank for collection. The second reserve bank now owes the first reserve bank, and these debts are settled by use of the Interdistrict Settlement Fund, which is a credit on the books of the Treasury owned jointly by the reserve banks. In this illustration the first reserve bank might send the check directly to the bank on which it was drawn and merely notify the second reserve bank. The reserve banks telegraph the Settlement Fund daily the amounts of their interdistrict clearings and these claims are canceled as in a regular clearing house, with the balances moving between the accounts of the reserve banks.

If the reserve bank immediately credited the depositing bank and if the other reserve bank immediately debited the drawee bank, the latter would lose reserves before the check arrived and could be charged to the depositor who drew it. In other words, the drawee bank would literally lose reserves before it became aware of the fact. On the other hand, if the reserve bank credited the receiving bank immediately but was not reimbursed immediately, it would be lending to the receiving bank. In practice, such checks are credited according to a time schedule designed to cover the time between the receipt of the check by the reserve bank and its receipt by the drawee bank. The reserve accounts of receiving banks usually are credited for checks sent for collection to other districts a few days after receipt by the reserve bank, the number of days depending upon the distance involved.

The reserve banks maintain the clearance and collection system without charge to the banks in order to provide a par collection of checks, in contrast to the slow, roundabout method involving exchange charges which prevailed prior to the reserve system. Member banks and others who have the privilege of clearing checks through the reserve system must honor checks drawn on them at

par; that is, make no exchange charge. The fact that they incur no costs removes the necessity for exchange charges, which in the past were defended on the grounds that, in order to pay out-of-town checks, banks had to (1) ship currency or (2) maintain correspondent balances on which they could draw drafts.

Other items besides checks may be collected by the reserve banks for their members. Bond coupons, maturing bills, and other obligations may be sent to the reserve bank, which will collect from the proper parties and credit the banks which sent the items. This service, of course, is no more than an ordinary bank would do for its customers.

The requirement of giving up exchange charges has led many small state banks in rural communities to refuse to join the reserve system. For these banks, exchange charges may be a significant item of revenue which they are reluctant to relinquish. By 1940, approximately 12,000 member banks and nonmembers making use of the clearing system were clearing checks at par, with more than 2,500 state nonmember banks still charging exchange. These nonpar banks held only about 2% of the total bank deposits. They were located principally in the reserve bank districts of Minneapolis, Atlanta, and St. Louis, there being none in the Boston, New York, or Philadelphia districts.

*Fiscal Agents for the Government*⁸

The United States Treasury normally maintains a large part of its funds as deposits at the various reserve banks. During the war this was not true because of the billions of dollars of war loan accounts built up in commercial banks by sale of bonds to banks and bank customers. However, prior to the war, Treasury funds were largely in the form of reserve bank balances as was intended at the establishment of the reserve system. The awkward Independent Treasury scheme was finally abandoned after World War I, since which time the government has used the banking system for its receipts and disbursements, although long before then it had become impossible for the government to operate on a specie basis. The reserve banks also do a great deal of work connected with the gov-

⁸ This section closely follows Board of Governors, *The Federal Reserve System: Its Purposes and Functions*. Washington, 1939.

ernment's debt, selling and redeeming securities for the Treasury. Although the receipts and disbursements of the government reach tremendous heights in time of war, even normally the amount of money flowing through the Treasury has earned for the government the title of "the world's greatest business." Government receipts are primarily taxes and proceeds of bond sales, which come from all parts of the country. Disbursements, similarly, are made throughout the country and, in fact, throughout the world. Domestic payments are made by checks, which are paid by the Federal reserve banks, usually to banks in which the checks are deposited.

The Federal reserve banks also perform important services for the Treasury in connection with the public debt. When a new issue of government securities is sold by the Treasury, the reserve banks receive the applications of banks, dealers, and others who wish to buy, make allotments of securities in accordance with instructions from the Treasury, deliver the securities to the purchasers, receive payment for them, and credit the amounts received to the Treasury's checking account. The reserve banks also redeem securities as they mature, make exchanges of denominations or kinds, handle transfers and conversions, pay interest coupons, and do a number of other things involved in servicing the government debt. They issue and redeem United States savings bonds and upon request hold them in safekeeping for the owners. For the convenience of the Treasury and also for the convenience of investors in government securities, it is necessary that there be facilities in various parts of the country to handle such transactions, and the Federal reserve banks furnish these facilities.⁴

The reserve banks also act as custodians of the collateral obtained by government loan agencies, such as the Reconstruction Finance Corporation, Commodity Credit Corporation, and Home Owners' Loan Corporation. A large part of the expense of these various fiscal agency functions is repaid by the Treasury to the reserve banks.

The Federal Reserve Bank of New York performs various functions for the government with respect to international dealings. It acts as the agent of the Treasury in making purchases and sales of foreign exchange for the Stabilization Fund. It also holds deposits made by foreign central banks in New York.

Most of the functions described above are called service functions. Acting as a depository for the legal reserves of the member banks, providing most of the country's circulating currency, and clearing and collecting checks are service functions, as are the functions the

⁴ *Ibid.*, pp. 35-36.

system performs as fiscal agent of the government. These overlap the so-called credit functions, which stem from the ability of the reserve banks to extend their credit when additional bank reserves are required, and the supervisory functions.

Supervisory Functions

Owing to the heterogeneous nature of the American banking system, the supervision of banks is not solely a function of the reserve authorities. National banks, which are all members of the reserve system, are examined and supervised by the Comptroller of the Currency. Examiners' reports and reports by the national banks are available to the reserve authorities through cooperation. Originally the Comptroller of the Currency, along with the Secretary of the Treasury, was an ex officio member of the Board, but these two members were removed in the reorganization of 1935 in order to make the reserve system more independent of Treasury policies. The state member banks are under the dual cooperative examination and supervision of the respective state authorities and reserve authorities. Nonmember banks are, of course, subject only to state supervision, except for those carrying deposit insurance, which are also under the supervision of the Federal Deposit Insurance Corporation, as are the insured member banks.

The principal supervisory powers exercised by Federal reserve authorities are:⁵

1. To set maximum rates that banks may pay for savings and time deposits, in order to prevent competition for funds, which might create such high interest charges that banks would turn to unsafe loans to earn these rates.

2. To take disciplinary action, including removal of officers and directors, for continued violation of banking laws or for unsound banking practices; and to take action, including suspension of member banks from access to reserve bank funds, for making undue loans for speculation in real estate, securities, or commodities.

3. To grant or refuse permits to national banks to exercise trust powers.

4. To grant permits to holding companies to vote the stock of member banks controlled by them. By this device such corporations,

⁵ Board of Governors, *The Federal Reserve System*, 1939, p. 34.

which are not themselves banks, become subject to supervision as a result of controlling separate member banks.

5. To grant permits to member banks to establish branches in foreign countries. About a hundred foreign branches are maintained by seven large member banks.

6. To prescribe rules and regulations governing loans for installment purchases by bank borrowers. This power, giving the reserve authorities some measure of control over the amount and purpose of such loans, was based upon an Executive Order of 1941 and was not adopted by Congress. It expired November 1, 1947.

7. To prescribe margin requirements for security purchases. This power permits the reserve authorities to require purchasers of securities to use their own funds rather than borrowed funds, or to allow securities to be purchased with varying proportions of borrowed bank funds. Such supervision, of course, is designed to control the volume of bank loans used for speculation.

Extent of Federal Reserve System

As explained above, some banks have resisted joining the reserve system because of the par collection system or other reasons. The reserve system is thus not complete in its coverage, and does not provide a single banking system for the country. Since the original passage of the Federal Reserve Act there have been many attempts to entice or force state nonmember banks to join. Early amendments relaxed the requirements that these banks conform to all of the restrictions on loans and examinations applicable to national banks. There was a spurt of reserve system membership during World War I, a decline during the 1920's, and another increase during the 1930's. The original deposit guarantee law of 1933 made membership a condition of obtaining deposit insurance. Some state banks still do not wish to join because (1) their capital would have to be increased to meet that required of national banks, (2) they do not wish to be subject to reserve bank supervision, (3) they do not wish to invest an amount equal to 3% of their capital and surplus in the stock of the reserve bank. Until 1933, when interest on demand deposits was outlawed, they had a further reason, in that many state laws permitted them to count as reserves their balances with correspondent banks. The correspondent banks paid interest on these

balances, whereas the reserve banks did not pay interest on their deposits.

TABLE 16

MEMBERS AND NONMEMBERS
OF THE FEDERAL RESERVE SYSTEM,
1915-1945

Commercial Banks					
June 30	Member Banks			Nonmember Total	Member and Nonmember
	National	State	Total		
1915	7,598	17	7,615	18,260	25,875
1925	8,066	1,472	9,538	18,320	27,858
1935	5,425	985	6,410	9,068	15,478
1945	5,015	1,825	6,840	7,164	14,004

Source: *Banking and Monetary Statistics*, p. 16 and *Fed. Res. Bulletin*, Sept., 1945, p. 921.

However, while there are still forty-nine banking systems in the country (forty-eight states and national), not counting the noncommercial banks, the Federal Reserve System embraces the great bulk of the commercial banking business. It appears from Table 17 that member banks hold about 87% of the demand deposits, loans, and investments of all commercial banks.

TABLE 17

DEPOSITS, LOANS, AND INVESTMENTS
BY CLASSES OF BANKS,
JUNE 30, 1945
(millions of dollars)

	Deposits		Loans	Investments		No. of Banks
	Demand	Time		U.S. Gov.	Other	
All banks	97,150	41,650	28,000	93,600	8,000	14,543
All com'l banks	97,150	27,250	23,650	84,000	6,800	14,004
Member banks	84,400	21,748	20,588	73,239	5,999	6,840
National banks	53,698	14,585	12,369	47,051	3,757	5,015
State members	30,702	7,163	8,219	26,188	1,842	1,825
Nonmember com'l	12,750	5,500	3,050	10,800	1,200	7,164
Mutual Savings	.....	14,400	4,350	9,600	1,200	542

Source: *Federal Reserve Bulletin*, Sept., 1945, pp. 920-921.

XV

THE SUPPLY OF MONEY

SEVERAL threads have been left hanging in preceding chapters which may now be brought together in a description of the money system as it exists today. Various forms of standard money and both government and bank-credit money have been noted in their historical sequence. The establishment of the Federal Reserve System supplied the country with the machinery for the provision of money which is essentially the same as that in operation today.

Bank Deposits

By far the more important element in the supply of money is the volume of demand deposits subject to check. It is generally estimated that about 90% of all transactions are settled by check, the rest by the transfer of currency. First, then, we may examine further into the nature of bank deposits. Time deposits are not used as money, since they cannot be spent. The holder of a time deposit must first exchange the deposit for a demand deposit or currency, which he can spend. In this respect, time deposits are like investments; they are obligations of banks to repay a fixed sum plus periodic interest. They differ from most investments in that the holder may exchange them for cash, upon notice, and obtain their face value. War bonds

and savings bonds are among the few examples of other investments of which this is true. Banks thus assume the risks of changes in the values of *their* investments in order to guarantee the time-deposit owner the value of his.

Types of Deposits

Other subdivisions of deposits indicate special arrangements between the banks and their customers. Table 18 shows the amounts of various types of deposits owned by different depositors of all insured commercial banks at the end of 1941 and in 1945.

TABLE 18
TYPES OF DEPOSITS,
ALL INSURED COMMERCIAL BANKS,
DEC. 31, 1941-JUNE 30, 1945
(millions of dollars)

	Dec. 31, 1941	June 30, 1945
Demand deposits	53,561	107,246
Interbank:		
Domestic	9,823	11,217
Foreign	673	1,119
U.S. government	1,763	23,478
States & political subdivisions	3,677	4,698
Certified checks, etc.	1,077	1,240
Individuals, partnerships and corporations	36,547	65,494
Time deposits	15,860	27,013
Interbank:		
Domestic	150	49
Foreign	7	16
U.S. gov't. & postal savings	59	105
States & pol. subdivisions	492	482
Individuals, partnerships and corporations:		
Savings	13,261	24,803
Certificates of deposit	1,049	898
Open accounts	803	461
Christmas savings, etc.	38	199

Source: *Banking and Monetary Statistics*, p. 410 and FDIC, *Report No. 23*.

Most of the headings and subheadings are self-apparent. By far the largest portion of demand deposits is held by individuals, partnerships, and corporations, although the government's deposits grew

a great deal in relative importance during the war. It will be noticed that interbank deposits make up an important part of total demand deposits.

Certified checks are drawn by depositors and certified by bank officials, so that there is no question in the minds of the recipients that the drawers had funds on which to draw. The amount of a certified check is deducted immediately from the account of the drawer; hence these checks must be reported separately from deposits as such until they are deposited again. A similar arrangement is found in the officer's or cashier's check, whereby the bank official draws a check and sells it to a customer.

Individuals, partnerships, and corporations may have several kinds of time deposits. A time certificate of deposit is a time deposit evidenced by a certificate, which may be negotiable and which provides that the amount of such deposit is payable to the bearer or to a specified person, or to his order, not less than 30 days after the date of the deposit. Savings deposits may be held only by individuals and nonprofit organizations. These deposits are evidenced by passbooks, and withdrawals may be made only to the person presenting the passbook or to the depositor without the passbook. A thirty-day notice of withdrawal may be required but is often waived by the banks. Open accounts are time accounts other than certificates of deposit and savings deposits in connection with which there is a contract between the bank and the depositor requiring a thirty-day notice prior to withdrawals.¹

Adjusted and Net Demand Deposits

The type of deposit is an important consideration to a bank in calculating its reserve requirements. This is illustrated in the following figures for demand deposits of member banks in August, 1945 (in millions of dollars) :

Gross demand deposits	95,061
Interbank	12,041
U.S. gov't war loan deposits	17,789
Other	65,230
Demand deposits adjusted	61,562
Net demand deposits	67,755
Demand balances due from domestic banks	6,105

¹ Board of Governors, *Regulation D*.

Gross demand deposits are, of course, all demand deposits without any deductions. They include certain duplications, in that when banks carry deposits with each other the total volume of bank deposits is apparently greater. Demand deposits adjusted refers to demand deposits less interbank deposits, the *float* and government deposits. The float is the cash items in process of collection; it is checks which have been credited to the accounts of their recipients but not yet deducted from the accounts of the drawers, and thus they show up twice. Demand deposits are *adjusted* in order to obtain a measure of the funds in the hands of the public.

Net demand deposits are the deposits upon which reserve requirements are calculated. Deductions are war loan deposits of the government, cash items in process of collection, and demand balances due from domestic banks. War loan deposits, granted the government in exchange for bonds, did not require reserves during the war. However, it will be noted that banks lost reserves when these deposits were checked out.² Deducting the demand balances due from other banks eliminates the overlap that would exist if both banks maintained reserves.

TABLE 19

ADJUSTED DEPOSITS OF ALL BANKS
1929-1945
(millions of dollars)

June 30-	Total Deposits, Adjusted	Demand Deposits, Adjusted	U.S. Gov't Deposits	Time Deposits
1929	51,532	22,540	381	28,611
1933	36,919	14,411	852	21,656
1937	51,769	25,198	666	25,905
1941	65,949	37,317	753	27,879
1945	137,900	69,100	24,600	44,200

Source: *Federal Reserve Bulletin*, Oct., 1945, p. 1031.

The division between time and demand deposits is shown in Table 19. Prior to 1939 there was a considerable growth in time deposits, which took place largely by a shift from demand deposits. Banks were anxious to increase their time deposits because of the lower

² Problems of financing the war are discussed in Chapter XXVIII.

reserve requirements and also because they were allowed to make investments with funds derived from time deposits that were otherwise barred. Banks paid higher rates of interest on time deposits, so individuals and firms with idle money found it advantageous to shift funds to time deposits. In addition, the normal increase in savings during the 1920's provided larger time deposits.

The liquidation of the early 1930's is shown in the shrinkage of

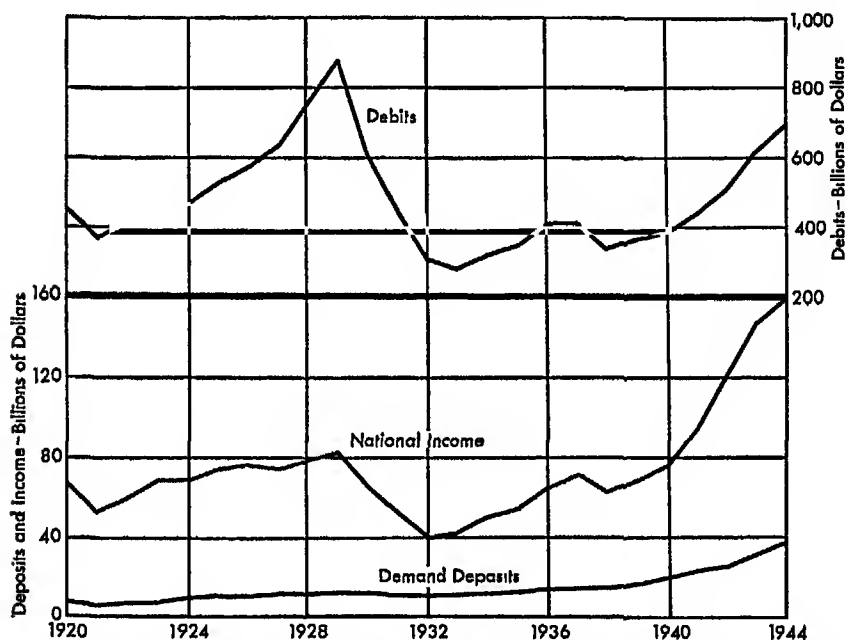


FIG. 13.—National Income, Demand Deposits, and Debits to Demand Deposits, 1920–1944. (National Income, Simon Kuznets and the Department of Commerce, Deposits and Debits for 101 Cities, *Banking and Monetary Statistics* and *Federal Reserve Bulletins*.)

adjusted demand deposits between 1929 and 1933. A drastic decline in loans and investments was accompanied by a similar decline in demand deposits. The shrinkage was also contributed to by withdrawals for hoarding and by bank failures. The inflation of wartime, on the other hand, boosted adjusted demand deposits to approximately three times their 1939 level. Some of the increased incomes of the war period were saved in time deposits, but these deposits failed to double.

Rate of Turnover

Since demand deposits are used as money, a given dollar of bank deposit may figure in a few or many transactions, depending upon how many times it is checked out in a period of time. A dollar in a completely idle account does not buy anything. If A buys from B, and B buys from C, and C buys from D, the same dollar may buy three dollars' worth of goods during the period. The rate of turnover is thus a significant figure in determining the extent of the use of money. In times of active business, the rate is relatively high, and vice versa. The rate is calculated by dividing the average volume of deposits into the amount of debits to individual accounts during the period. In the example above, three dollars would have been debited to bank accounts during the period, while there was a total (and average) deposit of one dollar, and the rate would be 3.

TABLE 20
RATES OF TURNOVER OF BANK DEPOSITS,
1920-1945

Year	New York City		Other Cities ¹	
	Demand and Time Deposits ²	Demand Deposits Only ²	Demand and Time Deposits ²	Demand Deposits Only ²
1920	56.0	60.0	26.9	37.3
1923	56.1	65.5	21.7	32.6
1926	65.2	77.8	21.3	34.3
1929	99.5	124.4	23.8	40.5
1932	31.7	37.6	13.6	23.9
1935	28.3	31.1	14.7	22.3
1938	23.5	25.7	13.8	20.2
1941	16.9	18.0	15.3	18.0
1942	16.1	18.0	13.1	18.4
1943	16.5	20.5	11.7	17.4
1944	17.1	22.4	10.8	17.3
1945	18.3	24.2	9.7	16.1

Source: *Banking and Monetary Statistics*, p. 254 and *Federal Reserve Bulletins*.

¹ There were 100 other cities until 1942. Beginning in 1942 333 other cities were used.

² Interbank deposits are excluded from both demand and time deposits, and government deposits are excluded from demand deposits.

Although time deposits cannot be classed as money, they have a rate of turnover, which is normally much less than that for demand deposits. By their nature, they are supposedly left on deposit for considerable periods before being withdrawn. Prior to 1930, the rate of turnover of demand deposits was substantially higher than

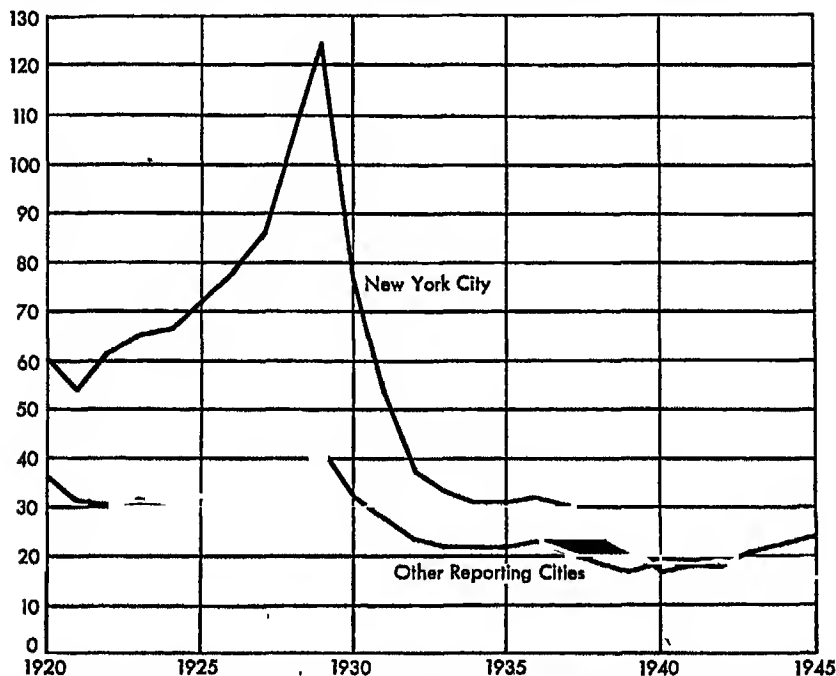


FIG. 14.—Annual Rates of Turnover of Demand Deposits, New York City and other Reporting Cities, 1920–1945. (*Banking and Monetary Statistics and Federal Reserve Bulletins.*)

the average rate for all deposits, including time. After 1930 the rise in bank deposits, growing out of gold imports and deficit spending by the government, was reflected by a decline in their rate of turnover. The rate reached its peak in 1929, when speculative transactions required a very large volume of bank debits; demand deposits in New York City turned over twice as rapidly in 1929 as they had in 1920. This was largely the result of transactions on the New York Stock Exchange, as it is apparent that the rate did not rise appreciably in the other 100 cities covered in Table 20. The business

doldrums of 1932 are expressed in the decline in the rate from 124 in 1929 to 37 in 1932. Then, as stated above, increased business and spending were carried on with a larger volume of money rather than by more intensive use of existing funds; hence the rate continued to decline. As it declined, the rates for time and demand deposits moved together, so that in 1941 demand deposits in New York City turned over hardly any faster than did time deposits.

Currency

Although currency has become a minor part of the money supply, dependent in volume upon that of bank credit, it has in the past encountered much more public interest. Even today most people apparently think of hand-to-hand money in its various forms as making up the total money supply. A consideration of how the mechanism of the banking system provides the "right" amount of currency for circulation throws further light on banking principles.

Convenience of Currency

Currency, including coins and paper money, is useful because it is more convenient in many transactions than are checks. Many retail transactions are settled by transfer of currency, as are some wage payments. The public is free to hold its money either in the form of currency or in that of bank deposits; hence the relative proportions of the two kinds of money are almost entirely a matter of convenience. Under modern conditions, too, the volume of bank deposits largely determines the volume of currency in circulation. In times of active business, bank loans lead to larger deposits, and as the volume of transactions in which currency is superior grows, more currency is withdrawn from bank deposits. This fact was noted as one of the restrictions on the expansion of bank deposits in Chapter VI.

Mechanism of Supply

The passage of a state sales tax law provides a good example of the way in which currency responds to the need for it. A sales tax requires many more pennies than were previously required. Buyers add a few pennies to what they pay, or they pay in round figures and get pennies in change. In any event, there is a need for pennies to be

carried in pockets and in cash registers. Soon after the passage of such a law, storekeepers, in need of a stock of pennies, withdraw them from banks. The banks, in turn, would withdraw pennies from their Federal reserve banks. The Federal reserve banks would obtain them in exchange for other money from the mint, which manufactures only as many pennies as the needs of business require. This process would reduce bank deposits while it increased the volume of money in circulation. It would also reduce bank reserves through the withdrawal of reserve balances.

Conversely, it would be futile for a government to attempt to keep more currency in circulation than is required. As was illustrated by the Silver Purchase Acts of 1878 and 1890, excessive currency will be deposited in banks, so that the end result is a rise in bank deposits.

An Associated Press dispatch for January 20, 1946, illustrates wartime needs for subsidiary money. It announced that the "loose-change shortage" existing during the war was about over, and that the United States mints had "worked 24 hours a day, seven days a week, to flip out almost 4,000,000,000 coins a year." The 1945 Christmas season put a great strain on the system: "Say a store puts on 100 extra clerks, . . . each clerk is another potential change-maker. And each change-maker needs change, of course." Taxes complicated the wartime problem too, because most prices, which had been figured previously in even nickels, with taxes added came out in odd cents. The demand for pennies at a time when copper was a critically short war material led to production of pennies from zinc and steel. People with penny collections were urged to spend them.

The currency in circulation may be standard money, bank-credit money or government-credit money. The existing system in the United States is a hodgepodge of historical accident. It will be recalled that one reason for designing the Federal Reserve System was to install a flexible or elastic currency. The Federal reserve notes were designed to meet this need. However, it is essential to note that any currency is elastic under the present system. Silver certificates, United States notes, and all sorts of currency are deposited in banks when they are not needed, and redeposited in the reserve banks to build up bank reserves.

Types of United States Currency

Table 21 shows the supply of currency on certain dates prior to establishment of the Federal Reserve System, and Table 22 shows similar data for years after 1913. The effects of monetary legislation described in previous chapters are shown here. In 1860 the mint ratio favored gold, and gold coins made up nearly half of the total volume of currency outstanding. State bank notes were practically equal in volume. Ten years later greenbacks (United States notes) and national bank notes made up most of the supply of currency. Later, silver legislation brought in silver certificates and Treasury notes of 1890. However, gold coins and certificates remained the largest element.

By 1920, we find Federal reserve notes making up \$3,065,000,000 out of the total currency in circulation of \$5,181,000,000. Federal reserve bank notes were designed to be temporary substitutes for national bank notes, which were to be retired. The reserve bank notes practically disappeared by 1930, but were revived to provide more currency during the bank runs of 1932-1935, and further issues were made to meet demands for currency in recent years. The national bank notes, which, it will be recalled, were secured by government bonds, are no longer liabilities of the national banks, since bonds with the note issue privilege have been retired, and banks with notes outstanding have deposited funds with the Treasury with which to retire them as they appear.

Gold was taken out of circulation by the government in 1933. Gold certificates also were required to be exchanged for other currency, but about fifty millions were reported as still outstanding in 1945.

The Wartime Increase

Currency in circulation rose from \$7,848,000,000 in 1941 to \$27,108,000,000 in 1945. Most of this increase took the form of Federal reserve notes. There are several reasons why money in circulation increased so greatly. In the first place, the wartime inflation provided millions of people with much larger incomes, so that the volume of money carried around by people increased. The increased volume of trade required more money; larger amounts piled up in cash registers every day. These would be deposited at banks but quickly with-

TABLE 21

CURRENCY IN CIRCULATION
PRIOR TO FEDERAL RESERVE SYSTEM

(millions of dollars)

June 30--	Total	Gold Coin	Gold Certifi- cates	Silver Certifi- cates	Silver Dollars	Treasury Notes of 1890	Sub- sidiary Silver	Minor Coin ¹	State Bank Notes	U.S. Notes	Nat'l Bank Notes
1860	435	207					21		207		
1870	775	81	32				9		2	325	289
1880	973	226	8	6	20		49			328	337
1890	1,429	374	131	298	56		54			335	182
1900	2,081	611	201	408	66	75	76	26		318	300
1910	3,149	591	803	479	72	4	136	46		335	684
1913	3,419	608	1,004	469	72	3	154	55		337	716

The total for 1870 includes 34 millions of fractional currency and 3 millions of other U.S. currency.

¹ Data available only for 1900 and later.

TABLE 22
CURRENCY IN CIRCULATION
UNDER THE FEDERAL RESERVE SYSTEM
(millions of dollars)

June 30-	Total	Gold Coin ¹	Gold Certificates	Silver Certificates	Silver Dollars	Treasury Notes of 1890	Subsidiary Silver	Minor Coin	U.S. Notes	Fed. Res. Bank Notes	Nat'l Bank Notes
1914	3,172	325	1,026	479	70	2	160	57	338		715
1920	5,181	188	259	98	77	2	249	91	278	3,065	185
1925	4,524	111	1,005	383	54	1	262	100	283	1,636	7
1930	4,235	70	995	387	39	1	281	117	288	1,402	3
1935	5,568		117	701	32	1	297	125	285	3,223	81
1940	7,848		67	1,582	46	1	384	169	248	5,163	22
1945 ^a	27,108		52	1,732 ^b	127		800	296	322	23,139	521
											125

^a July 31, 1945.

^b Includes Treasury notes of 1890.

¹ Gold coin has not been reported as in circulation since 1934. On that date it was estimated that the 287 millions then reported as in circulation were largely lost, melted, or exported, so that amount was deducted from the amount reported for each year back to 1914.

Source. *Banking and Monetary Statistics and Federal Reserve Bulletin.*

drawn again. Many people who had never had bank deposits preferred to save money by accumulating cash. But it is obvious that the increased volume of trade and employment did not explain all of the increase. Much of the increase came in bills of large denominations, which are seldom spent. It was fairly clear that many "black marketeers" were doing a cash-only business in order to eliminate records of over-ceiling sales, which bank checks would have shown. Furthermore, sales for currency provided means of evading income taxes. Sales and profits at ceiling prices could be reported, and the difference hidden in bills. Towards the end of the war there was a growing movement to declare worthless all large bills not exchanged or deposited prior to some dead line. Such action would have required "black market" sellers and tax evaders to explain where they got their funds, but not much was done except that some people who did exchange unusually large bills were questioned.⁸ The different rates of increase of coins and one-dollar bills, on the one hand, and twenty-dollar bills and larger, on the other, are shown in Table 23. The large amount of \$10,000 bills in 1940 apparently represents money brought into or sent to this country from Europe to escape the war.

TABLE 23

COIN AND PAPER MONEY IN CIRCULATION
BY DENOMINATION,
1930-1945
(millions of dollars)

End of	Coin	\$1	\$20	\$100	\$1,000	\$10,000
1930	518	404	1,130	Not available		
1935	478	460	1,359	627	239	16
1940	648	610	1,800	1,112	523	60
1945 ¹	1,236	1,003	8,700	4,038	832	22

¹ August 31, 1945.

Source: *Banking and Monetary Statistics and Federal Reserve Bulletin*.

The Supply of Money

The foregoing description has covered the principal constituents of the supply of money, demand deposits and currency. In summary,

⁸ Such a procedure was adopted in Holland after the liberation. All notes were turned in to blocked bank accounts or declared worthless. The accounts were to be released after investigation and deduction of special taxes.

the reasons for including these two items and excluding others should be reviewed. If we start with a concept of money as something that pays debts and buys goods in final settlement, it is necessary to rule out all other types of payments in which settlement is not final. The characteristic of general acceptability, emphasized in the early chapters, is important here in determining what means of payment actually settle transactions and which merely postpone final settlement. For this reason we rule out such things as charge accounts and book credit, which, although they permit buyers to take goods from sellers, leave a debt which must still be settled by something we call money.

Currency as Money

The popular conception of currency or cash as money is so strong that no argument is necessary before including it within the definition. In fact, the necessity lies in persuading the reader that currency is a minor factor in the money supply and in monetary theory. Furthermore, in determining the available supply of money at a moment of time, we cannot include all of the currency in existence. There are two major deductions necessary to maintain the logic of the definition. The first is the standard money locked up in reserves by the government or central bank. When gold certificates circulated, for example, it would have been obvious double counting to include both the certificates in the hands of the public and the gold reserves of the government. Although the government had the gold, it could not spend it legally, but only exchange it for other types of money. This is true similarly of standard money maintained as reserves for government credit money. If the government should reduce such a reserve by spending some of the standard money, then this money would be in the hands of the public and would be counted. It should be remembered, of course, that under the present monetary standard in the United States standard money (gold) cannot circulate domestically, and therefore it could not be spent by the government for goods and services.

The second adjustment would be the currency in banks. This cannot be counted in the supply of money because the deposits, which gave the bank the currency, are counted. While it is true that the bank might be able to "spend" the money, this raises the question of the treatment of bank reserves, to be discussed below. The prob-

lem of what to do if the bank receives currency for a time deposit is best answered by considering the transaction as a reduction in the supply of money.

Demand Deposits as Money

Similar adjustments have to be made in the reported totals of demand deposits before having a total that corresponds to our definition of money. The adjustments that are made for various purposes have been discussed above. Net demand deposits are not necessarily a measure of spendable balances because deposits owned by the government are as much money as those of any other owner. If we were engaged in constructing a figure representing the supply of money in the United States, we would include government deposits.⁴ We would also include cashiers' checks outstanding and similar items since they merely represent in a special way the demand deposits being spent. On the other hand, we would exclude interbank deposits on the same line of reasoning by which we excluded currency in the banks.

The reserve balances of the member banks raise a similar problem. Clearly, the required reserves should be excluded from the money supply, although they are money as far as the individual banks are concerned, since they are required as reserve and cannot be used for other purposes. Excess reserves present a different problem, in that they are spendable by the banks. Banks with excess reserves can make loans by granting new deposits, purchase investments or other assets, or pay dividends with these funds. On the other hand, as soon as banks do make use of their excess reserves, deposits are created somewhere in the system, so it is probably more consistent to exclude excess reserves from the concept of money. When additional loans or investments are made there will then be an increase in the money supply in the form of deposits.

Liquid Assets

The inclusion by economists of demand deposits in their concept of money and the exclusion of time deposits often creates confusion for those who have not carefully considered the problem. It seems

⁴ See L. Currie, *Supply and Control of Money in the United States*, Chapters II and III, Harvard University Press, 1934.

so obvious to many that both demand and time deposits represent "money in the bank" that one seems as much money as the other. As stated above, however, the principal distinction is that time deposits cannot be spent as such, any more than a bond or a house can be "spent." Time deposits do represent money, since they can be converted into money by withdrawals, whereas demand deposits actually are money since they can be spent. In this country the distinction is fairly well observed, although in other countries so-called time or savings deposits may be subject to check and thus they actually may be demand deposits. The savings deposits in the mutual savings banks, on the other hand, can be withdrawn only by presentation of passbooks at the banks' counters.⁵

The ownership of liquid assets like time deposits or savings bonds, which can be converted into money at fixed amounts, or marketable bonds and callable loans, may lead the owner to act differently with regard to his money than he otherwise would. Since these assets are virtually money as far as he is concerned, he is likely to feel more free to spend his currency or demand deposits. The accumulation of war bonds at the end of the war left many people in a position in which they could reduce their cash holdings. Since the people or firms that received this money also may have had large holdings of liquid assets, they too felt freer about spending the money. Consequently, the money in existence probably circulated faster as a result of the large stock of war bonds and time deposits than it otherwise would have. The result on the volume of spending was therefore about the same as if the liquid assets themselves were spendable. However, it is important to the analysis of such situations to realize that the spending is a reflection of velocity of turnover rather than volume of money.

Another important aspect of the existence of the war bonds and savings bonds is that they are potentially increases in the supply of money itself. Since they are redeemable by the government at fixed prices, holders can at any time convert them into money. If the government could succeed in taking money from other people as taxes in order to meet the conversions, there would be no increase in the supply of money, but if the government sells still other bonds to the

⁵ W. Welfing, "Characteristics of Savings Deposits," *American Economic Review*, XXX, No. 4 (December, 1940).

banks in order to get the funds, then there would be a larger supply of demand deposits.

Bills of Exchange

One question remains concerning various credit instruments which, like savings bonds, are "near money." Bills of exchange have sometimes been considered part of the money supply, since at first thought they appear to be means of payment. Actually, when a seller draws a bill against his buyer or his buyer's bank, he has not yet received payment. His payment occurs when he sells the bill to his bank; he is paid by the receipt of a bank deposit, which we have included in the supply of money. The bill is similar to the ordinary check in so far as it is a claim against a bank deposit, but differs in that it ordinarily is not transferred in payment of debt but is first sold for money.

One reason for the distinction between currency and demand deposits on the one hand and other credit instruments and liquid assets on the other is that, as a general rule, the latter bear interest. This has not been a clear-cut distinction at all times, since, for example, banks customarily paid interest on demand deposits until 1933. On the other hand, at times interest-bearing securities have been used as money. In general, however, the interest-bearing securities make inconvenient money and, as long as there is a satisfactory money system, they are not so used. Mention has already been made of the use of bills of exchange as money in the American colonies; bills were also used as a medium of exchange in England in the eighteenth century. Nevertheless, today interest-bearing assets are those that have been exchanged for money or will be exchanged for money, and hence they are not used as or defined as money themselves.

XVI

THE MONEY MARKET

HAVING reviewed the history of the development of the monetary and banking systems until fairly recent times, we will examine in this and the next few chapters in greater detail the organization and functions of the money market. With this background, recent developments can be explained more adequately, and we will return to a consideration of the recent history of banking in later chapters.

The New York Money Market

A market has been defined as the meeting place of buyers and sellers. Some markets, like the New York Stock Exchange and many commodity exchanges, are highly organized. Others may be quite informal, like the curb markets where farmers bring produce to be sold. The money market is different only in that money is not thought of as being bought and sold. However, future money is exchanged for present money, the discount or interest representing the difference in value. The money market, then, is the loan market.

A money market is a mechanism for the investment of short-term funds and the medium through which a large part of the financial transactions of a par-

ticular country are cleared . . . in the narrower sense in which the term is generally used . . . a money market includes only dealings in more or less standardized types of loans . . . in which personal relations between lender and borrower are of negligible importance.¹

Actually, there are thousands of money markets, as there are thousands of markets for most things, but we are mainly concerned with the New York money market, because New York has become the financial center not only of the country but of the world. To this important place are sent idle funds, which are lent or invested, principally in liquid forms. To a large extent, the funds are deposited in New York banks, but also they may be handled by the banks acting as agents for the owners.

Types of Loans

There are four principal types of loans or investments which lenders make in order to earn interest and at the same time maintain a high degree of liquidity. These are:

1. Commercial paper
2. Brokers' loans
3. Short-term government securities
4. Bankers' bills

The way in which funds come to New York and are invested in these forms, along with the resulting effects on money conditions, bank reserves, and related items, is the subject matter of this chapter.

Commercial paper is the promissory notes of business enterprises sold in the open market. They are purchased largely by banks, which consider them secondary reserves; that is, they are not reserves, but earning assets, yet they are so sure to be repaid at short maturity that they are considered future reserves. They are bought at the market rate of discount for such paper, and the repayment at par provides the banks with earnings. Brokers' loans have already been described as the loans made to brokers, the proceeds of which the brokers use to purchase securities for their customers. The brokers pass on to their customers the interest charged by the bank. These loans are usually callable, so that the bank may get its money back at will, or the loans may be time loans for short periods.

¹ Major B. Foster and Raymond Rodgers (Eds.), *Money and Banking*, revised ed., New York, Prentice-Hall, Inc., 1940, p. 417.

Short-term government obligations are usually loans which the government floats in anticipation of revenues; it may borrow for a few months in anticipation of tax payments or the flotation of a regular bond issue. These obligations usually carry no interest but are sold at a discount from par. Bankers' bills have also been described above. Essentially, they are the obligations of banks to pay a certain sum on a certain date, and they usually arise out of transactions in foreign trade. These last two types of securities generally carry lower rates of interest (discount) than do the first two. The reason obviously is the decreased risk involved in accepting the obligations of the government or recognized banks. Anyone, of course, may buy these earning assets, and all sorts of investors seeking short-term loans and liquidity do so. Bankers use them for these purposes. Their characteristics as secondary reserves are excellent not only because they are redeemable at maturity, but also because they are eligible for use at the reserve bank if funds should be needed prior to maturity.

Since people or firms with idle funds are apt to keep them in New York banks, but principally because banks with excess reserves are likely to send them to New York, these additional deposits provide the New York banks with reserves which must be kept in much more liquid condition than those of banks in other localities. Consequently, the New York banks are important lenders in the four money markets listed above, and borrowers naturally seek this market for their loans.

The Bill Market

Use of bills by banks as secondary reserves makes them a much more important element in the money market at times than their actual volume would indicate. The bill market depends for its existence upon a group of dealers, whose function it is to purchase bills and retail them. When a bill has been accepted and returned to the bank which discounted it, or to the correspondent of that bank, it will be sold to a dealer, unless the discounting bank wishes to hold it until maturity. The dealer, in turn, attempts to sell it to a bank looking for such investments or to other investors. Like any dealer of commodities, he thus has a stock to carry. The money tied up in this stock of bills is usually borrowed from banks. Dealers normally

borrow this money from day to day at call for low rates, since the security (the bills) is excellent. When money is scarce, however, dealers may not be able to locate loans cheaply, and they turn to the reserve banks, as will be described below.

The acceptance or bill market consists of the drawers of the bills, the accepting banks, the dealers, and the investors. Unlike commercial paper, bankers' acceptances have never had a period of great popularity, although their use did become fairly common during the 1920's. After 1920 commercial paper declined in volume. The support of the bill market by the reserve banks has failed to popularize the use of bills. A large proportion of the outstanding acceptances has been created to finance international shipments, either exports (usually) or imports.

TABLE 24

AVERAGE OPEN-MARKET MONEY RATES
IN NEW YORK CITY,
1930-1945

Year	Prime Com'l Paper, 4-6 Months	Prime Bankers' Acceptances, 90-day	Stock Exchange Call Loans	U.S. Gov't 3-month Bills
1930	3.56	2.46	2.94	2.23
1933	1.87	.60	1.18	.26
1936	.75	.15	.91	.14
1939	.59	.44	1.00	.05
1942	.66	.44	1.00	.326
1945	.75	.44	1.00	.375

Source: *Federal Reserve Bulletins*.

When the Federal Reserve Act permitted national banks to accept drafts drawn upon them, which had not been permitted by the National Banking Act, there was a mushroom growth of the business. However, it soon became apparent that drafts drawn against large and well-known banks commanded a better price and were easier to sell to investors, so business firms tended to go to such banks for accommodation. At the present time relatively few banks are acceptors, and most of the business is done in New York, with most of the remainder in Boston and Philadelphia. As for the dealers, ten firms do nearly all of the business, acceptances occasionally being handled by other financial houses as a side line.

TABLE 25

COMMERCIAL PAPER AND
BANKERS' ACCEPTANCES OUTSTANDING,
1925-1945
(millions of dollars)

Date	Commer- cial Paper Out- standing	Dollar Acceptances Held by						Reserve Banks
		Total	Accepting Banks					
			Total	Own Bills	Bills Bought	Others		
June 1925	759	608	125	53	72	193	290	
1930	527	1,305	205	64	141	503	597	
1935	159	343	317	154	163	26	—	
1940	224	206	166	112	54	40	—	
1945	101	107	80	44	36	27	—	

Source: *Banking and Monetary Statistics*, p. 465 and *Federal Reserve Bulletin*, Jan., 1946, p. 59.

Government Security Market

The services performed by the reserve banks in handling the mechanics of the sale of newly issued government bonds have already been mentioned. Purchases and sales of government securities already in the hands of investors are made almost entirely through the over-the-counter market; that is, government bonds and short-term obligations are usually not listed on the New York Stock Exchange. Some Treasury bonds and bonds of Federal agencies are listed, but the majority are not. The over-the-counter market is the market made by individual dealers, who buy and sell the securities. Quoted prices are the bid and asked prices of the dealers. A quotation of 100-101, for example, means that dealers are generally willing to pay 100% of par and sell for 101%. The great increase in over-the-counter trading in recent years has been caused partly by increase in unlisted government securities. The volume of transactions handled by the dealers every day provides about the same marketability and liquidity for these unlisted securities as would be the case if they were listed. There is a constant turnover as investors increase or decrease their individual holdings.

Commercial Paper and Brokers' Loans

The other two money markets are considered together because of their particular relationships to the Federal reserve banks. As will be discussed presently, the reserve banks may be direct participants in the bill and government security markets, but as a rule not in the commercial paper or brokers' loan markets.

Commercial Paper Dealers

The commercial paper market consists of the firms that draw notes, the commercial paper dealers, and the investing banks. The dealers grew to importance in this country as a result of the system of unit banking. Under the American system of thousands of separate unit banks it was entirely possible for a credit stringency to exist in one part of the country while banks had excess reserves to lend in another part. An additional reason was the difficulty that large firms often had in obtaining all of their credit needs from a single bank. A relatively large business, especially one located in a small or medium-sized community, might not be able to borrow enough for its seasonal needs from the small bank or banks in its community. Not only might the banks have insufficient funds to lend, but the legal restriction against lending more than 10% of a bank's capital to one borrower might be a barrier. Thus there was a considerable need for an intermediary to place the promissory notes of such a borrower with the banks that had the funds available for such a purpose.

The advantages to the banks lay in the diversification made possible. A unit bank through a commercial paper dealer could obtain the promissory notes of enterprises located in different parts of the country and engaged in businesses completely different from those of the home industries. When local business was seasonally idle, the bank could keep its funds loaned and acquire the proper maturities so that the funds would be returned by the time local loans began to expand. This, of course, is the secondary reserve function of commercial paper.

As the banking system began to integrate, particularly after 1920, banks became larger and fewer. At the same time, businesses that might have used commercial paper found it possible to raise

capital funds through sale of securities on the boom market of that decade. The largest borrowings normally have been by textile firms, the next largest by food and hardware firms. The result of this combination of factors was a decline not only in the volume of commercial paper but also in the importance of commercial paper houses. In recent years a dozen or so firms have carried the bulk of the business, and these are engaged in other financial tasks as well, dealing in securities or acting as brokers.

A commercial paper house performs a valuable function for commercial banks or other investors in its careful analysis of the credit of the borrower. Although paper sold by commercial paper houses ordinarily is not endorsed or guaranteed by them, the necessity of maintaining a reputation for handling high-grade paper has led the houses to assure themselves that the paper would be repaid at maturity. The loss record of commercial paper is amazingly small, and equally impressive is its record for prompt payment at maturity.

Brokers' Loans

A loan to a broker of funds to be used in margin trading may be made by direct negotiation between the broker and his bank, through the intermediary function of a moneybroker, or through the money desk of the New York Stock Exchange. The stock exchange operates the money desk as a clearing point for the supply of bank funds and the demand for them by member firms of the exchange. Banks with a surplus of reserves which they wish to lend in the form of call loans notify the money desk, as do member brokers or dealers who wish to borrow. The money clerk apportions the available loans to the first brokers to ask for them; they then arrange with the banks to which they are assigned for the actual loans. In this manner the supply and demand for loans is quickly ascertained and a rate of interest is announced that will presumably strike a balance. Individual brokers are free, however, to make other arrangements if they like.

The Federal Funds Market

Before the era of excess reserves beginning in the middle 1930's, a situation often arose wherein some banks had a slight deficiency of required reserves while other banks had slight excess reserves. This gave rise to a market for "Federal funds," which are drafts

or claims against the reserve banks or the Treasury. This market is an additional part of the general money market, as such Federal funds are bought and sold like the four types of short-term loans listed above. The reserve banks give immediate credit when a check drawn against them or the Treasury is presented. A bank with a deficiency of reserves thus can tender its own cashier's check to a bank with surplus reserves in exchange for a check drawn on the reserve bank by the latter. When deposited, the latter check immediately increases the reserve balance of the first bank, but the cashier's check will be cleared through the usual process, and consequently a day will pass before it is charged against the reserve balance of the first bank and credited to the reserves of the second bank. Thus, the bank with deficient reserves has a day in which to call loans or sell securities in order to increase its reserves without rediscounting. Of course, the bank pays a premium for the Federal funds, amounting to one day's interest.

The Money Market and the Reserve Banks

The deficiencies of the New York money market as a reservoir for the country's bank reserves have been described in connection with the National Banking System. The seasonal movement of funds to and from New York could not be accommodated at all times because of the use of the funds in New York and the liquidation required to release them. Superimposed upon this difficulty was the effect of the withdrawal and restoration of reserves through the operation of the Independent Treasury. We may now turn our attention to the changes in the money market brought about by the establishment of the reserve banks.

Movements of Funds

Although correspondent balances in New York no longer are included in banks' legal reserves, such correspondent balances continued to exist after the reserve system came into operation. Until 1933 interest was paid on demand balances and still is for time accounts, so banks in the interior still had the opportunity to send funds to New York to draw interest during the slack seasons. Even when the interior banks wish to acquire secondary reserves directly instead of depositing funds in New York, the funds with which they

buy government bonds or bills are likely to be deposited in New York banks by the sellers. Consequently, there is a constant flow of funds to and from the New York money market as banks in various parts of the country are buying or selling secondary reserves in that market. The New York banks, therefore, still feel this movement in increases and decreases of their reserves. The ordinary operation of the financial system has been changed considerably since 1933 because of the period of great excess reserves and the period of war finance, but the underlying factors affecting the operation of the money market still exist.

Establishment of the reserve banks made it possible for the New York banks to obtain additional reserves from that source when outflows of reserves created money stringencies in New York. As has been mentioned before, the possibility of disposing of earning assets for reserves from outside the commercial banking system was intended to eliminate the financial panics that characterized the National Banking System and to even out interest rates in the money market.

Reserve Bank Contacts

Banks obtain funds from the reserve banks in several ways, either on their own initiative or at the instance of the reserve banks. The relationships between the commercial banks, the reserve banks, and the money market are illustrated in Figure 15. It will be observed that connections run between the member banks and all four markets, but between the reserve banks and the bill market and government security markets only. Further, a connecting line is drawn between the reserve banks and the member banks. These lines illustrate the points of contact between the money market and the reserve banks. The reserve banks may directly enter the bill and government securities markets as buyers or sellers, or they may acquire from the member banks paper originating in three of the markets.

Bills

Member banks may rediscount assets, borrow, on the security of assets, or sell the assets to the reserve banks. Until the emergency legislation of the 1930's, rediscountable paper had to meet the tests of eligibility set up by the Federal Reserve Act, but, as has been

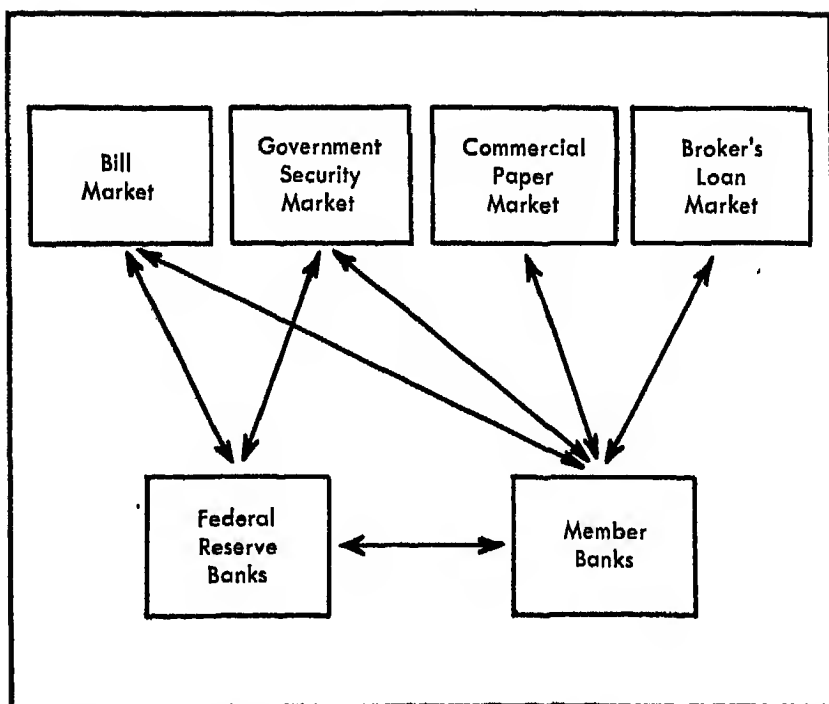


FIG. 15.—The Money Market and the Reserve Banks. (Adapted from W. R. Burgess, *op. cit.*, p. 152.)

mentioned previously, it is now within the power of the reserve banks to lend on any assets they consider sound. Bills have been salable to the reserve banks from the beginning. As a general rule, the reserve banks have not bought bills from the accepting banks, but only bills that banks had already purchased in the open market. A more intricate relationship exists between the reserve banks and the bill market in the purchases made from dealers. The support given by the reserve banks to the bill market has taken the form of ready purchases of bills from dealers when the latter were unable to obtain sufficient loans from the commercial banks to carry their stock of bills. Without this support the dealers would be forced to unload the bills at sacrifice prices. This readiness on the part of the reserve banks meant for the banks the assurance that loans to dealers could be called with payment assured, since the dealer could get the funds from the reserve bank. It also meant that the market values of bills held by the

banks would not be subject to sharp fluctuations caused by sacrifice sales by the dealers. The support to the bill market thus improved the quality of the loans and of the bills themselves. New York banks took advantage of both; holding a portfolio of bills in normal times, by which they could adjust their reserve positions, and making loans to dealers.

TABLE 26
FEDERAL RESERVE BANKS'
BUYING RATES ON BILLS

Maturity	Rate on Sept 30, 1945	In Effect Since	Previous Rate
Treasury bills	$\frac{3}{8}$	4/30/42	
Bankers' acceptances			
1- 90 days	$\frac{1}{2}$	10/20/33	1
91-120 days	$\frac{3}{4}$	"	1
121-180 days	1	"	1 $\frac{1}{4}$

Note: After May 15, 1943, all purchases were made subject to repurchase option
Source: *Federal Reserve Bulletin*, January, 1946, p. 41.

Usually, the reserve banks buy from dealers with a repurchase agreement; the dealer agrees to repurchase the bills in 15 days, and the difference between the price paid by the reserve bank and charged by it represents the interest cost to the dealer. Until recent years most of the bills bought outright were purchased from banks. By selling bills to the reserve bank, a bank can replenish its reserves without borrowing. Since the selling bank does endorse the bills, it may be said to be borrowing indirectly, but not directly. This convenient method of replenishing depleted reserves explains the use of bankers' bills as secondary reserves. In recent years the holdings of bills by the reserve banks have been very small because member banks have had excess reserves. During the war, of course, international trade, and thus the volume of bills, were limited.

Seasonal demand for funds is thus partly taken care of by the reserve banks through the bill market. Increased business activity gives rise to a larger supply of bills, and as the demands for loans increase (1) banks withdraw funds from New York and (2) New York banks themselves may make more loans, so that any normal volume of excess reserves owned by the New York banks is likely to

be lost or used up. To meet any deficiency they may sell bills to the reserve banks and reduce loans to dealers. Later, they do not offer so many bills to the reserve banks and as the bills are paid at maturity, the bill holdings of the reserve banks decline. If the excess reserves are not large to begin with, the offerings of bills to the reserve banks will be heavier than in years when the banks have large excess reserves. In 1934 and 1935, for example, bill holdings of the reserve banks practically disappeared, but in 1931, when banks were losing reserves through the export of gold, the reserve banks held at one time over \$600,000,000 of bills. In late 1945 they had none.

Government Securities

The reserve banks may purchase government securities directly from the banks or from other investors, or the member banks may borrow from the reserve banks using government securities as collateral. Whatever method is used, reserve bank credit adds to the money supply by adding to the volume of reserves.

The purchases and sales of government securities by the reserve banks are called their *open-market operations*. The term may also be applied to their purchases of bills, but they do not sell bills, letting them "run off" at maturity without replacing them if they wish to reduce their holdings. Open-market operations are the method by which the reserve banks impose credit conditions upon the market rather than passively provide more reserves or allow reserves to be paid back to them. The policy adopted by the reserve authorities in this matter is the subject of a later chapter. We are here concerned more with the mechanics of the transactions.

It is obvious that if a reserve bank buys a bond from a member bank, the commercial bank loses the bond but obtains reserves. It is only a little less obvious that, if a reserve bank buys a government bond from any other holder, bank reserves will also be increased. When a reserve bank buys a bond from a nonbank seller, the latter is paid by check drawn by the reserve bank against itself. The seller deposits the check to his account in his bank, which collects the check by sending it to the reserve bank, where the amount is added to the reserve balance of the member bank. Contrariwise, when the reserve bank sells a bond, the buyer pays by check drawn against his

bank, and the reserve bank accordingly reduces the reserve balance of the bank. Thus open-market sales reduce bank reserves.

It should be noted that open-market operations do not depend for their result on the nature of government bonds but purely on the extension of Federal reserve credit in the form of reserve balances. If the reserve banks operated in that fashion and the law allowed, they could conduct open-market operations in peanuts and soda pop; purchases would pump money into the market and sales would pump it out.

Commercial Paper

Under the original Federal Reserve Act the reserve banks were not intended to make loans directly to commerce or industry but only indirectly, if the need arose, through the commercial banks. Since 1935 the reserve banks may make direct loans under certain circumstances, the apparent shortage of bank credit during the depression having led to this amendment. During the war, also, some special loans were made directly for war production. However, as a general rule, the contact of the reserve banks with the direct loan and commercial paper markets is through the commercial banks, as illustrated in the diagram used above. Commercial paper may be rediscounted at the reserve bank if it is acceptable to the reserve bank. The same comments as were made above concerning the holdings of bills apply here: in times of excess reserves, reserve bank holdings are negligible or disappear, while they may be substantial at other times.

Stock Exchange Loans

Brokers' loans are not eligible for rediscount under the Federal Reserve Act. Since "any sound asset" may be used as collateral for a loan if accepted by the reserve bank, it might be thought that the reserve banks have indirect contact with the brokers' loan market in this way. The reserve banks, however, have never encouraged this type of loan, considering it as speculative. There is thus in practice no connection between the call loan market and the reserve banks, either directly or through the commercial banks. This does not prevent a still more indirect relationship, however. Money is fluid and,

like water, runs wherever the forces at hand attract it. The commercial banks may build up reserve balances by shifting more of their other assets to the reserve banks and then use the reserves for brokers' loans. This would normally be contrary to the wishes of the reserve banks, but the organization of the money market is such that it can and does happen.

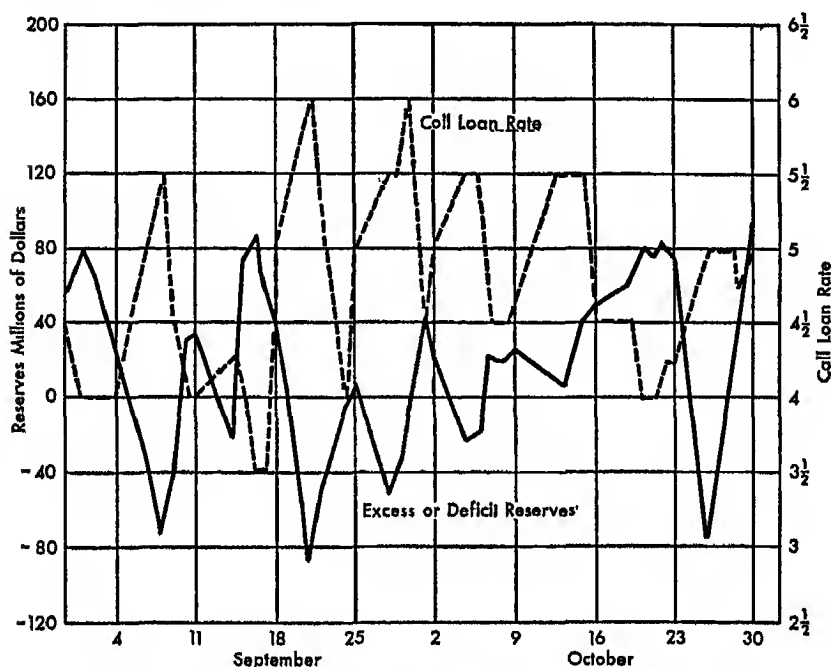
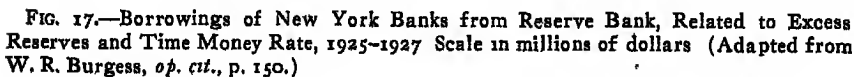


FIG. 16.—Average Excess or Deficit of Reserves, New York Banks, and the Call Loan Rate, September–October, 1925. (Adapted from W. R. Burgess, *op. cit.*, p. 185.)

Reserves and the Money Market

It is apparent that the money market is strongly affected by the reserve position of the New York banks. When they have plenty of reserves, either because of seasonal movements of funds to the money centers or because of a flow of gold such as that which provided excess reserves after 1934, loans are easier to get in the four branches of the money market described above. When the New York banks are short of reserves, loans are less easy to get, and interest rates tend to rise. Interest rates were extremely stable during the

Figure 16 shows the relationship between the reserves held by 23 New York banks and the closing rate charged for call loans during two months of 1925. The inverse correlation between the reserve ratio and the loan rate is easily apparent. When the banks let their reserves run below requirements, they began to call loans, and the rate rose. When reserves rose above requirements, the banks were willing to make loans, and the rate fell. There is a fairly regular tendency for the rate to be higher towards the end of the week when the banks were preparing to meet the reserve requirements.



On the other hand, Figure 17 shows the seasonal fluctuation in borrowing at the reserve bank by the New York banks, along with the stability attained thereby for the reserves. It will be observed that the reserves hovered just above requirements, although the movements of funds led the banks to borrow varying amounts from the reserve bank. The rate on time brokers' loans is also charted, and it can be seen that the fluctuations in the rate under the National Banking System have been somewhat flattened out. The fluctuations between 4% and 5% during these years were correlated with the borrowing from the reserve bank. The fact that the member banks could borrow did not eliminate fluctuations in money market rates because banks do not like to become indebted and because indebtedness costs them interest. The difference between the New York money market under the reserve system and its predecessor is that under the reserve system liquidation was not required by the outflow of funds, and more funds could be brought into the system from the reserve banks. Hence, money did not tend to become so "tight" as previously, and interest rates did not fluctuate so widely. It bears repeating that the ability of the reserve banks to provide additional funds was of little significance in the immediate prewar years as the movement of funds merely caused changes in the amounts of excess reserves and did not lead the banks to resort to Federal reserve credit.

XVII

THE MONEY MARKET: FOREIGN EXCHANGE

THE USE of bankers' bills as secondary reserves, and the consequent importance of the bill market as an intermediary between the reserve banks and the member banks, has been discussed in preceding chapters. An extension of that discussion carries us into the field of foreign trade and foreign exchange. *Foreign exchange* means foreign funds: bank deposits in foreign countries or claims to them. The difference between foreign exchange and domestic exchange is that two currencies are involved, which require a price, or ratio, between them. Par collection of checks has virtually abolished exchange charges in this country, but it may help in introducing the concept of foreign exchange to recall that it was once normal for funds in New York, for example, to cost more or less than par in other cities. If a St. Louis businessman needed funds in New York, he could buy them from his banker. The St. Louis bank would have a deposit in New York against which it could draw drafts and sell them; a draft for \$100 might sell for \$101. The St. Louis businessman could send the draft to his New York creditor for collection. If St. Louis were in a foreign country and the St. Louis businessman had bought the draft with *louis* at a price of perhaps 250 louis for the \$100, there would have been an example of foreign ex-

change, and the exchange rate in St. Louis would have been 2.50 louis to the dollar.

Use of Bills

The essentials of bankers' bills have been described in previous chapters, but it is now desirable to consider them a bit more completely. Figures 18 and 19 illustrate graphically how a bill may be employed to finance either an export or an import. The essence of the export transaction is that the domestic seller wants dollars while the foreign buyer has some other currency, say English pounds. There may be a second problem: the credit terms to be extended by the seller, if any.

Exports: Supply of Exchange

This problem is resolved in the following steps, or some variations of them. The foreign buyer arranges with his bank to allow the American exporter to draw a draft against it to pay for the goods.

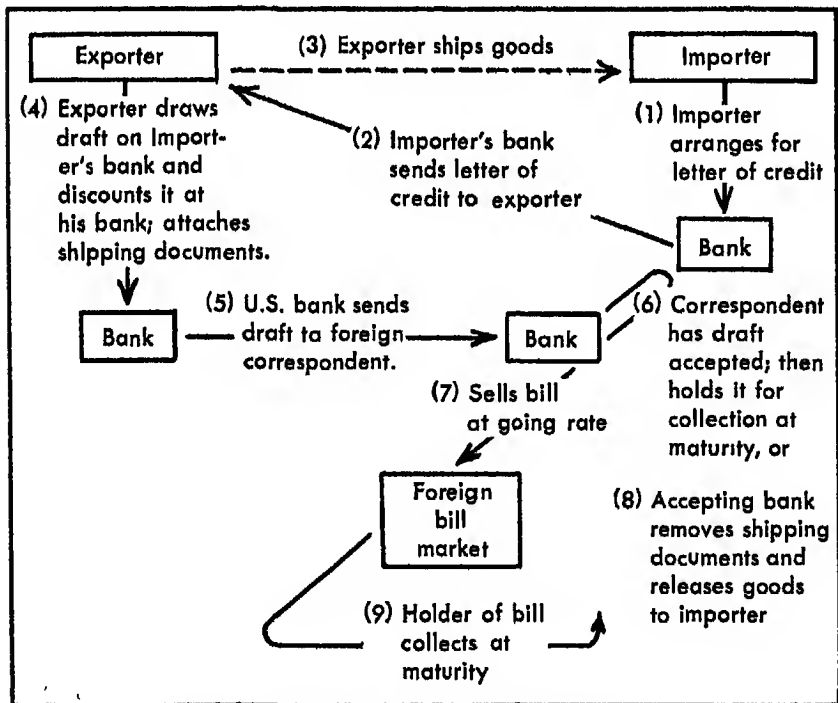


FIG. 18.—Banker's Acceptance Used to Finance an Export.

The bank sends the exporter a letter of credit, authorizing him to ship the goods and draw a draft for a certain number of pounds, let us say 1,000. The exporter ships the goods, attaches the bill of lading and insurance papers to the draft which he draws, and discounts (sells) the draft at his New York bank. If credit terms are involved, the bank discounts the draft for the specified length of time. The exporter thus obtains a bank deposit of dollars in New

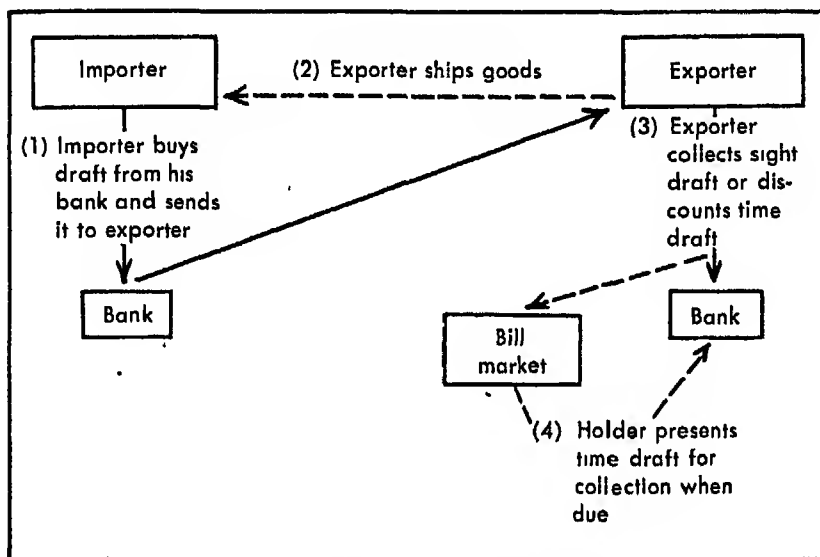


FIG. 19.—Bank Draft Used to Finance an Import.

York amounting, let us assume, to \$5,000. The New York bank sends the draft to its correspondent bank in London, along with the shipping papers, and the correspondent bank presents the draft to the accepting bank for payment, if it is a sight draft, or for acceptance if it is a time draft. If the latter, the correspondent bank holds the bill (once the draft is accepted it is called a bill) until maturity, or sells it in the London bill market, whichever the American bank instructs. The English buyer, having been given the shipping documents by his bank, perhaps under the terms of a trust agreement, obtains the goods from the shipping company. On the date of maturity whoever holds the bill collects it, and the accepting bank pays, simultaneously collecting from the English buyer of the goods.

From the point of view of the New York bank, this transaction resulted in the payment of funds in New York, when it granted the exporter a dollar deposit, and the acquisition of funds in pounds in its London correspondent. Thus this type of draft may conveniently be considered to represent the *supply* of foreign exchange.

Imports: Demand for Exchange

Importers in the United States may wish to pay their British exporters in pounds. The imports, of course, are exports from the point of view of the British. They might be financed in the same way as described above, with the English exporter drawing a draft on an American bank. The result would be that a London bank would acquire New York balances. However, this eventually would lead to the American banks paying out all their American funds and ending up with all their money in pounds, with the English banks in just the reverse position. This dilemma is avoided by the banks' selling their foreign balances to importers, or, for that matter, to each other.

We will assume, then, to counterbalance the example of the export, that we have an American importer who intends to pay for his goods by acquiring foreign money. Accordingly he purchases a draft from a New York bank drawn against its balance in its foreign correspondent. Again, the draft may involve credit terms; it may be payable immediately on demand, a sight draft, or it may be payable on some future date. The New York bank thus avoids having its foreign balance accumulate indefinitely, because in this transaction it takes in American dollars and sells pounds. The purchase of drafts on foreign balances thus represents the *demand* for exchange.

The Balance of Payments

The supply of or demand for foreign exchange—that is, the supply of commercial drafts and the demand for bankers' bills—arises from all sorts of transactions between nationals of different countries. Exports and imports of merchandise are therefore only part of the total market forces affecting the exchange rate. Americans may owe foreigners, and vice versa, for the performance of services or for securities, and payments may be made as gifts. Hence, we may tabulate the sources of supply and demand as follows:

Sources of Supply

(Foreigners owe Americans who may draw commercial drafts on them or their banks) ¹

1. Exports of merchandise
2. Services
 - a) Foreign tourists in the United States
 - b) Interest and dividends on foreign securities held by Americans
 - c) Services performed by American shipping, insurance, communication, and other companies for foreigners

3. Capital Items

- a) Investment by foreigners in American securities
- b) Repurchase by foreigners of foreign securities
- c) Loans to Americans by foreigners
- d) Repayment of American loans abroad
- e) Sales of foreign currencies for American bank deposits, for safety or speculation

Sources of Demand

(Americans owe foreigners and may purchase bank drafts for payment) ¹

1. Imports of merchandise
2. Services
 - a) American tourists abroad
 - b) Interest and dividends on American securities held by foreigners
 - c) Services performed by foreign shipping, insurance, communication, and other companies for Americans

3. Capital Items

- a) Investment by Americans in foreign securities
- b) Repurchase by Americans of American securities
- c) Loans to foreigners by Americans
- d) Repayment of foreign loans to Americans
- e) Purchase of foreign bank deposits for safety or speculation

Exchange Rates

We now come to two related problems concerning the price of foreign exchange: (1) the relationship between the price of a draft the banker buys (commercial draft) and the price of the draft he sells (bank draft), and (2) the level of these prices (the exchange rate itself).

¹ The student should remember that a transaction may require a national of one country to purchase a bank draft or else permit the other party to draw a commercial draft; the first case appears as demand for one currency, the other case as supply of the other currency.

Commercial and Bank Bills

As to the first point, it is clear that there will normally be a spread between the two prices to represent the banker's gross profit. He must pay a little less for his commercial drafts than he charges for his bank drafts. Like any other profit margin, this spread will be subject to competition. It is usually quite small, percentagewise, but since large volumes of money are involved, the amounts of profit are respectable. It may be, for example, one-eighth of a cent when the pound sells for around \$5.00. In other words, for a commercial sight draft in New York, the bank would pay \$4.94 $\frac{1}{8}$ while it charges \$4.94 $\frac{1}{4}$ for a banker's sight draft payable in pounds in London.

Interest

Also, the margin includes the influence of interest. Since the banker receives payment for his draft immediately, and several days are required for mail to reach London by boat, he will gain funds in New York before he loses them in London, where they may be earning interest. This gain in interest makes the margin less than it otherwise would be. In fact, the banker may sell a cable transfer, by which he would lose funds promptly in London, and for this the price would of course be higher, say \$4.94 $\frac{3}{8}$.

Interest enters into the prices when the commercial draft or bank draft is not payable for some time in the future. If a banker buys a time commercial draft, he will discount it for the time involved at the market rate; he will likewise sell a time draft cheaper than a sight draft. Consequently a normal prewar line-up of rates would be:

Cable transfers	\$4.94 $\frac{3}{8}$
Bankers' sight drafts	4.94 $\frac{1}{4}$
Commercial sight drafts	4.94 $\frac{1}{8}$
60-day bills	4.93 $\frac{1}{8}$
90-day bills	4.92 $\frac{1}{8}$

Level of Rates

As to the level of the exchange rate, which usually is taken to be the price of bankers' cable transfers, it is easy to see how supply and demand affect the rate. If there is a greater demand for bankers' bills than there is a supply of commercial bills, the banker finds that he is

selling away his foreign balance, which is his stock in trade. He becomes more anxious to buy commercial drafts and less anxious to sell drafts. He offers a higher price for commercial drafts and charges a higher price for his drafts; the demand for foreign exchange has thus raised the exchange rate. Conversely, of course, if he finds that he is buying more commercial drafts than he is taking in for bankers' bills, he will tend to lower the rate.

TABLE 27

AVERAGE EXCHANGE RATES

(in cents per unit, New York cable transfers)

1937 and June, 1945

Currency	1937	June 1945
Argentina, Peso	32.959	29.773
Brazil, Cruzeiro ¹	8.643	6.060
India, Rupee	37.326	30.122
Canada, Dollar	100.004	90.909
Mexico, Peso	27.750	20.581
France, Franc	4.046	2.018 ²
Germany, Mark	40.204	.....
England, Pound	494.400	403.500

¹ Prior to Nov. 1, 1942, called Milreis.

² Market resumed in August, 1945.

Source: *Federal Reserve Bulletins*.

These variations in the rate, however, do not explain why the rate is where it is, but only how it fluctuates at some general level. If twice as many dollars were offered bankers for bankers' drafts than there were pounds offered in the form of commercial bills, the rate that would equate supply and demand and stabilize bankers' funds in both countries would be \$2.00 to the pound. The number of dollars being offered depends, obviously, upon the volume of imports (including "invisible" imports) from the various foreign countries, and that in turn depends largely upon the relative price levels here and abroad. A large volume of imports would create a large demand for bank drafts. If foreign prices were expressed in large units, many dollars would be needed to equal these large units. English prices are expressed in pounds, which are large units, as it takes several dollars to buy a pound. French prices are expressed in francs, which

are small units; one dollar will buy many francs. Basically, of course, after adjustments for tariffs and shipping costs, a dollar will tend to buy as much in one market as in another. If, let us suppose, one could buy a pound for a dollar, English goods would become very cheap to Americans. There would be a great rush for British goods, and therefore for drafts to pay for them, and the rate would be pushed up to where the two markets are equated. Thus, in the absence of some limiting factors, the exchange rate tends to measure the difference in the buying power of the two currencies.

Purchasing Power Parity

This equality between the ratios of relative purchasing powers of various currencies and their respective exchange rates is known as purchasing power parity. Normally if one currency commands, say, four units of another currency in exchange markets, the first currency must command four times as many goods as does the second for the exchange rate to be stable. Other transactions may, however, create a supply or demand for one of the currencies that permits a foreign exchange rate to exist that does not reflect purchasing power parity. As will be noted in Chapter XXVIII, ratios of purchasing powers drew away from controlled exchange rates as price levels fluctuated during the war.

The purchasing power parity doctrine provides a means for calculating the new exchange rate required by shifting price levels, if exchange rates are free to move, or for calculating the degree of disequilibrium if price levels move and exchange rates are fixed. For example, assume that from an equilibrium situation the price level in Country A rises to 150% of its previous level, while the price level in Country B rises to 200%, and assume that the exchange rate is 4A to 1B. Equilibrium would be re-established at a rate of 3A to 1B, as B's currency now buys three times as much as A's currency, rather than four times as much. This is shown as:

$$\frac{\text{Price level in A}}{\text{Price level in B}} = \frac{150}{200} \times 4 = 3.$$

The concept that international finance affects only two countries is misleading, although it is a useful approach to the subject. Actually, trade between two countries, such as the United States and

Brazil, may be financed in the currency of a third country, perhaps England. An American exporter would be willing to draw a draft against an English bank, if the Brazilian importer could arrange to get a letter of credit, and he would be equally willing to accept a draft drawn against an English bank which the Brazilian might send him. The American exporter could, of course, then buy dollars with his pounds by selling the drafts to his bank.

Taken in the aggregate, any transaction in which an American owes payment to a foreigner will either (1) create a demand for foreign exchange by the American or (2) create a supply of dollars through the commercial drafts drawn on the American or his bank. Both are virtually identical in effect and both tend to lower the price of dollars and raise the price of foreign money, i.e., raise the exchange rate.

Arbitrage

Exchange rates tend to rise and fall together because of arbitrage. This is the process of simultaneously buying and selling foreign exchange in order to take advantage of a temporary cheapness or dearth of a specific currency.² Suppose that through some temporary movement of funds the rate on Paris is low while it is high on London. An American foreign exchange dealer would buy francs, which are cheap, which he would immediately use to buy pounds. His purchases of francs would tend to raise the Paris rate and his offer of pounds for dollars would tend to lower the London rate. The move would be all the more profitable if the London rate in Paris happened to be low. Arbitrage dealings thus tend to keep all New York rates in line. Seasonal differences between rates tend to be ironed out through arbitrage. As the seasonal flow of goods in one direction affects the rates, arbitrage dealings in anticipation of future changes take place, and the temporary movements are merged into long-run movements.

The fact that trade between two countries could hardly expect to balance exactly furnishes the background for arbitrage operations. In the example above, francs might be cheap because of an American export surplus to France and pounds might be expensive because of an import surplus from England. Arbitrage dealings result in the dollar reflecting the over-all international position of the United

² Arbitrage is common as well in markets other than foreign exchange.

States so that, except for special circumstances, the dollar rises and falls against all other currencies.

Arbitrage dealings also keep rates uniform between pairs of money centers; that is, the rate between the dollar and the pound must be about the same in New York as in London. As stated above, importers in both countries might be required to remit drafts to the exporters in the exporters' currencies, in which case banks in both countries would sell away their foreign balances. If such a development should happen, dollars would be expensive in London and pounds would be expensive in New York. This could not take place, however, because dealers in New York, for example, could order their London correspondents to sell dollar drafts for pounds and at the same time sell bank drafts in New York against the pounds. In this way the dealer would obtain pounds cheaply and sell them at a high price, giving him a dollar profit. The fact that such transactions take place as soon as such a profit appears and that they drive the rates together again prevents the New York and London rates from diverging appreciably.

Dollar and Finance Bills

The bills described above, to illustrate the nature of foreign exchange transactions, were related to specific transactions. Exporters drew bills as a result of shipping goods or importers bought bankers' bills in order to pay for goods. Acceptances may be used also to finance the storage or movement of goods, and, too, in transactions not connected with specific transfers of goods or securities. Dollar exchange is such an example. Dollar exchange is the name for drafts drawn by bankers in certain specified countries for the purpose of acquiring dollars from the American money market. The trade with these countries is sufficiently seasonal that the reserve officials recognize the difficulty of matching purchases and sales of bills. During the time of year when, for example, a Central American country is importing but not exporting, importers might be unable to acquire from their banks sufficient dollar drafts to pay their American exporters because the banks might have insufficient funds in the United States. In such a case, the Central American banks could draw time drafts against their New York correspondents and request them to sell the accepted drafts in the money market, crediting the proceeds

to the accounts of the drawer banks. They would then have balances to sell for local currency. When the drafts mature, say 90 days later, the holders collect from the correspondent banks, and in the meantime the Central American banks have been able to build up their balances by buying commercial drafts from local exporters. With these balances they reimburse the New York correspondents.

Finance bills, as the name implies, are more of a financial than a trade instrument, and are sometimes called loan bills. They were more common during the widespread use of the gold standard than later, as they were used in anticipation of movements of exchange rates expected to follow from seasonal changes in trade. If a Paris banker expects the New York rate for francs to become cheaper, he might instruct a New York bank to draw a time draft against him. This would be sold to an American importer seeking francs and be sent to Paris for acceptance and sale in the money market. The dollars obtained by the New York correspondent would be invested at short term for the benefit of the Paris banker. By the time the bill matures in Paris, the short-term investment is liquidated and the funds are used by the American correspondent to purchase a franc draft to send to the Paris banker. If francs are cheaper as anticipated, the Paris banker has made a profit in francs. Any difference between the rate of interest obtained on the American investment in the meantime and what he could have obtained in Paris affects the amount of the profit. Like other types of speculation on the gold standard, these transactions tend to level out the movements of exchange rates. The original sale of francs when the rate was high tended to reduce the rate; the eventual purchase when the rate was expected to be low would help to keep it higher than it would otherwise have been.

Gold Points

There are generally two limiting factors which prevent exchange rates from fluctuating a great deal. A few years ago the widespread use of the gold standard was such a factor, and just prior to and during World War II government control of exchange rates was another.

It will be recalled that the existence of the gold standard in the United States meant (before 1933) that the dollar consisted of 23.22

grains of pure gold. At that time the pound consisted of 113 grains of pure gold, which was 4.8665 times as much as the gold content of the dollar. A banker who wanted to transfer funds from England to the United States could do so by purchasing gold with his pounds, 113 grains for each pound, shipping the gold to the United States, and selling each 113 grains for \$4.8665. Certain costs would be incurred, principally for packing, shipping, and insurance. Unless he sold New York funds payable when the gold got there, there would also be a loss of interest during transit. These costs would vary, of course, but were usually about two cents per pound. Hence, the banker would never sell his drafts for less than approximately \$4.84, and this lower limit to the fluctuation of the exchange rate was known as the *gold import point*. Conversely, funds could be transferred from New York to London by shipping gold, so that the banker would never pay more than approximately \$4.89 for a commercial draft. It would be cheaper to build up his foreign balance by shipping gold. This was the *gold export point*. Thus, the gold points did two things: (1) limited the fluctuation of exchange rates and (2) substituted instead the flow of gold.

This movement of gold seldom was a dominant factor in the policies of the reserve banks but it has been important for other central banks. It so happens that since the establishment of the reserve banks there has seldom been a shortage of gold in this country, but other countries have not been blessed with large gold reserves. This has led them to try to match credit conditions with the state of the gold supply. The immediate cause of a loss of gold would be demand for foreign exchange. This, in turn, would result from demand for foreign goods or securities or for services or travel abroad. A restrictive credit policy was supposed to correct this condition. If the central bank sold securities and raised its rediscount rate, interest rates would rise and that country would become a better one in which to invest. Funds would tend to cease flowing out and to flow in, with a resultant decline in the exchange rate from the gold export point. The mere fact that the gold outflow would cause the banks to lose reserves would also tend to tighten credit conditions in that country. As will be observed as we again pick up the development of the American banking system, the reserve banks sometimes adopted the reverse

policy of trying to offset the effects of gold imports or to prevent them.

When the exchange rate reaches the gold import (lower) point, and gold is imported, bank reserves increase, and there is a tendency towards lower interest rates and increased loans and investments. Funds may flow into and out of the New York money market through international exchange in much the same way as they flow from and to the interior of the United States. The effects on money market conditions are, of course, similar, and their effects on the reserve banks and reserve bank policy arise from the same circumstances. Because of these reactions the gold standard was called automatic.

Controlled Exchange Rates

Governments seldom allow exchange rates to fluctuate freely, in the absence of the gold standard. After the general breakdown of the gold standard in the early 1930's, exchange control became common. The reasons for this are to be examined in Chapter XXVI. As a matter of comparison with the gold standard, it should be pointed out here that purchases and sales of foreign exchange by a government agency usually take the place of the gold standard when a paper standard prevails. These purchases and sales may be designed either (1) to create a rate other than the one that would have prevailed without interference or (2) to eliminate day-to-day fluctuations, or both.

From the foregoing description it may be seen that, if a government attempts to create an artificial rate, it must provide the exchange that exports or imports fail to provide. If, for example, there is a rate of 50 cents on some country, and the United States wishes to raise that rate (and other rates), the government must supply dollars to purchase the other currency and drive its price up, thus depreciating the dollar. If, on the other hand, the United States wishes to stabilize a rate at 45 cents it must sell the foreign currency in sufficient volume to keep it down to that price. This raises a problem of how the United States government is to obtain the foreign currency. It may have such balances from past transactions or it may borrow them, or the other country may cooperate to supply its currency when the rate in New York rises above 45 cents.

The Export-Import Bank

Established in 1934, the Export-Import Bank has become important in the field of financing international trade. It was established under Presidential Order to provide credit facilities for trade with Russia soon after the Russian government was recognized by the United States. A Second Bank was established shortly after to provide similar facilities for trade with Cuba. Negotiations with Russia failed to produce the expected volume of trade, and the first Bank absorbed the second and grew into the present Export-Import Bank. Originally the Export-Import Bank was supposed to encourage the recovery of foreign trade, which had shrunk to about a quarter of 1929 dollar values during the depression, by supplementing private credit institutions. It was thus to provide credits with which foreign buyers could purchase American exports, or lend to American importers, in situations where such loans appeared justifiable but were not obtainable from private banks.

Since 1945, the Treasury has owned the shares of the Bank amounting to \$1,000,000,000, and may advance up to \$2,500,000,000. The Bank may thus have loans outstanding up to \$3,500,000,000. It is governed by five directors, the Secretary of State, and four others appointed by the President.

During the late 1930's the facilities of the Bank were utilized mostly to finance American exports. World trade came so completely under regulation and control of various governments that it seemed necessary to provide American exporters with some assistance comparable to that furnished other exporters. Foreign borrowers in the normal course of events would obtain lines of credit which they could draw on to purchase American exports, the funds being released to the exporters as the goods were shipped. The functions of the Bank gradually were expanded to go beyond the assistance given to trade and to include measures taken to implement American foreign policy. Loans were made with a view to assisting foreign governments to obtain needed American goods. After the war, rehabilitation loans were requested by several European governments in order that they could purchase American equipment and other goods needed in postwar rebuilding. The Bank has thus become an important device in postwar reconstruction and planning.

XVIII

CENTRAL BANKING: THE RESERVE BANKS AND THE MONEY MARKET

EXCEPT in the United States and certain other countries which established full-blown central banks by law, central banks have evolved gradually and have developed the functions now known as central banking functions as conditions required. Even in the United States, as earlier chapters have indicated, reserve banks came into existence after an evolutionary development of various other institutions, which had demonstrated their weaknesses from the point of view of the monetary system. The first and second Banks of the United States, the Suffolk Bank, the city banks under the National Banking System and the Independent Treasury all performed some of the functions of a central bank.

Functions of Central Banks

While the older central banks, like the Bank of England, developed into their present central positions, they were at first organized to perform specific duties or to do a general banking business like any other bank. The Bank of England was organized to make a loan to the British government. The original capital of the bank was so employed, and was thus invested in the government securities held by the bank. The Bank eventually was given a monopoly of note issue,

which was of course a powerful advantage in the general banking business prior to the widespread use of checking accounts.

Note Monopoly and the Gold Standard

As the banking system of England developed, other commercial banks came to use the notes of the Bank of England as their reserves. The reserves of the banking system therefore were dependent largely upon the lending policies of the Bank. When gold from abroad was deposited at the banks, they enjoyed an increase both in deposits and in reserves. The banks then were apt to deposit the gold at the Bank of England; they could transfer this deposit to others or withdraw it in the form of Bank of England notes (or gold again, if their customers so demanded).

Under the British system for many years the Bank was required to maintain a gold reserve of 100% for most of its notes, so it did not make further loans of these notes as a result of deposits of gold. However, it could make loans in the form of deposits, which would tend to be deposited in the other banks; thus the banks obtained claims on the Bank of England. They considered these claims or deposits at the Bank of England as their reserves along with their Bank of England notes. These deposits at the Bank could of course be withdrawn in the form of Bank of England notes. Thus the Bank normally maintained sufficient gold reserves to meet a drain of notes.

In this way the Bank of England came to consider as its principal function the protection of the convertibility of its notes into gold. If more bank reserves in the form of notes were demanded by the commercial banks, the Bank of England could issue them only if it had additional gold. At times, indeed, the Bank did issue them without 100% gold reserves under *suspensions* of the Bank Act, but these were also suspensions of the gold standard. Consequently, the Bank of England followed in general a policy of so influencing the money market that gold would not be exported in sufficient quantity to endanger its ability to redeem any notes which might be presented. This policy was expressed in the willingness of the Bank to extend loans and in the rates charged by it. When gold was in adequate supply, the bank rate was low and when gold was in short supply (the Bank's reserve ratio to deposits being low) the rate was higher.

At various times central banks have adopted other criteria for ac-

tion, while still others have been proposed. Some of these will be considered in later chapters. Among the more important are attempts to stabilize or improve business conditions, to control the price level, to stabilize incomes, and to control exchange rates.

The Reserve Banks as Central Banks

Maintenance of the gold standard has at rare intervals been a concern of the reserve officials, but conditions in this country have as a rule permitted (if not forced) these officials to consider other policies. As explained previously, the characteristic that primarily differentiates the reserve banks from commercial banks is that their deposits are the reserves of the member banks. Since the volume of deposits of the banking system depends to a large extent upon the volume of bank reserves, the volume of loans and investments and the volume of deposits existing at any time depend crucially upon the volume of reserve banks' balances. Since the reserve banks can expand and contract these balances by expanding and contracting their loans and investments, they have an obvious opportunity and responsibility to influence the volume of bank reserves.

Reserves in the American System

The nature of bank reserves has already been discussed, but a further consideration of the factors making for changes in the volume of reserves is now appropriate. In this connection it is necessary to differentiate between the reserves of the reserve banks and the reserves of the member banks and other commercial banks. Since the reserve banks are required by law to have reserves of gold certificates, now 25% for both notes and deposits, the volume of reserve bank reserves depends upon the volume of monetary gold and whether the Treasury issues gold certificates upon it. As a general rule, gold must be sold to the Treasury at the statutory price, and the Treasury then deposits an equal amount of gold certificates at the reserve banks to reimburse itself for the cost of the gold. The Treasury need not issue the certificates, however, and at one time during the heavy inflow of gold before the war it did not do so, its purpose having been to reduce bank reserves. The Treasury obtained the money with which to buy the gold at that time by borrowing in the money market.

The reserves of the member banks are also influenced by gold

movements, since gold that is imported and sold to the Treasury gives the seller funds to deposit at his bank. Member bank reserves are influenced further by the volume of reserve bank credit for, when the reserve banks expand their deposits, the deposits come into the hands of the banks. A minor factor influencing the volume of bank reserves is the currency that may be issued by the Treasury; ordinarily such currency is deposited at a reserve bank and the resulting deposit may be checked out by the Treasury and deposited by the recipient in a commercial bank.

In summary, the member banks keep their legal and some of their working reserves on deposit at the reserve banks, and the various ways in which the reserve banks influence the size of these balances are their central banking operations in the field of credit policy.

Control of the Reserve Ratio

Probably the most obvious instrument in the hands of the reserve authorities to influence member bank reserves is the authority to alter reserve requirements, vested in them under the Banking Act of 1935. It should be noted that this instrument does not change the volume of bank reserves, when used by itself, but merely changes excess reserves to required reserves when the ratio is raised. If the member banks had deposits of \$100,000,000,000 and reserve balances of \$20,000,000,000, while the required reserve ratios averaged 15%, they would have \$5,000,000,000 of excess reserves. If the reserve authorities were unable to use other instruments to be described below, or merely preferred to change the ratio, a requirement of 20% on the average would wipe out all of the excess reserves. The potential loans and investments that might otherwise have been made by the banks with their excess reserves could not now be made. Similarly, if the member banks had no excess reserves in this example, a reduction of required reserves to 12% would free \$3,000,000,000 of the reserve balances. If there were a sufficient demand for bank loans, or if the banks should make investments, deposits could be expanded to an amount approximately equal to eight times the \$3,000,000,000.

The Rediscount Rate

The traditional instrument of central bank control of the money market is the rediscount rate, or some similar rate characteristic of

the money market in question, like the bank rate of the Bank of England. In the United States, the rediscount rate is the rate charged by the reserve banks for rediscounting commercial paper. Its influence may be illustrated by an example. Suppose a customer of a bank discounts his note for \$10,000 at 6% for 60 days. This rate may be considered the equivalent of $\frac{1}{2}\%$ per month, amounting to a discount of \$100 for the 60 days. The bank therefore credits the customer with \$9,900 in exchange for his note. Suppose that 30 days later the bank, being deficient in reserves, presents the customer's note to its reserve bank for rediscount, and suppose that the rediscount rate is 3%. For the remaining 30 days the note has to run, the charge is therefore \$25, and the reserve bank credits the member bank with \$9,975. When the note is due the customer reduces his deposit at the bank by \$10,000 or presents a check on another bank for that amount and the bank returns the note, which it has received from the reserve bank, thus reducing its reserve as well. The transaction results in the bank earning \$75 rather than \$100.

It might be thought that the bank profited by this transaction, since it earned \$75 for lending its own funds for one month rather than \$100 for lending its own funds for two months, and that member banks would therefore be anxious to rediscount eligible paper in order to expand their loans. However, banks have traditionally been reluctant to become indebted, and at the same time the reserve officials have frowned upon rediscounts for this purpose. According to the Federal Reserve Act the purpose of rediscounts is to accommodate banks which need additional reserves for the "legitimate" needs of their business customers. The relationship between this purpose and the rules of eligibility was discussed in the chapter on the establishment of the reserve system.

In actual operation, banks that find themselves short of reserves are faced with the choice of liquidating some of their secondary reserves or borrowing from the reserve bank. Banks borrow in order to replenish their reserves, rather than to make additional loans. In a sense, of course, they have already made the "additional" loans, or they would not be deficient in reserves, unless the deficiency is caused by unexpected withdrawals. But in either case, the bank normally has secondary reserves on hand for this purpose. The influence of the rediscount rate therefore is to be measured by its relationship to the

open-market rates prevailing on secondary reserves. The rediscount rate is normally above these rates, such as the rate on bankers' acceptances, as illustrated in Figure 20. When banks are seeking reserves open-market rates tend to rise and some time later, as a rule, the rediscount rate is raised to its normal relationship.

The mechanism as practiced in the London money market may be contrasted to that used in the United States. The Bank of England deals with customers other than banks to a much greater extent than do the reserve banks. London banks normally keep a large fraction of their secondary reserves in the form of loans to brokers and dealers in bills. When the banks need more reserves, they are likely to call these loans, and the brokers and dealers go to the Bank of England for accommodation. The rate charged by the Bank is usually higher than the rate the brokers have been paying their banks, and is thus called a *penalty rate*. In the United States the rediscount rate is normally below the rate the banks charge their customers but is above the rates prevailing in the money market. The tradition against borrowing by member banks is thus reinforced by what amounts to a penalty rate in the New York money market as well.

When banks must reduce their holdings of secondary reserves or borrow, and the money market rates rise, the result is a deterrent to bank loans and investments. Banks have less funds to lend, and customers are deterred by the higher rates. The reserve banks can accentuate this situation by a steep rediscount rate or alleviate it by a low rate to encourage rediscounting. More important, however, the reserve banks can provide additional reserves without rediscounting through open-market purchases, if the reserve banks do not favor a reduction of bank lending. On the other hand, the rediscount rate is powerless in periods of excess reserves if the reserve officials wish to restrict bank lending. Additional loans can be made by the banks without a reduction in their secondary reserves or rediscounting, and hence an increase in the rediscount rate at such a time would not have much influence. This leads us to the third instrument of control, open-market operations.

Open-Market Operations

There is usually an inverse relationship between open-market holdings by the reserve banks and the volume of rediscounts. It has al-

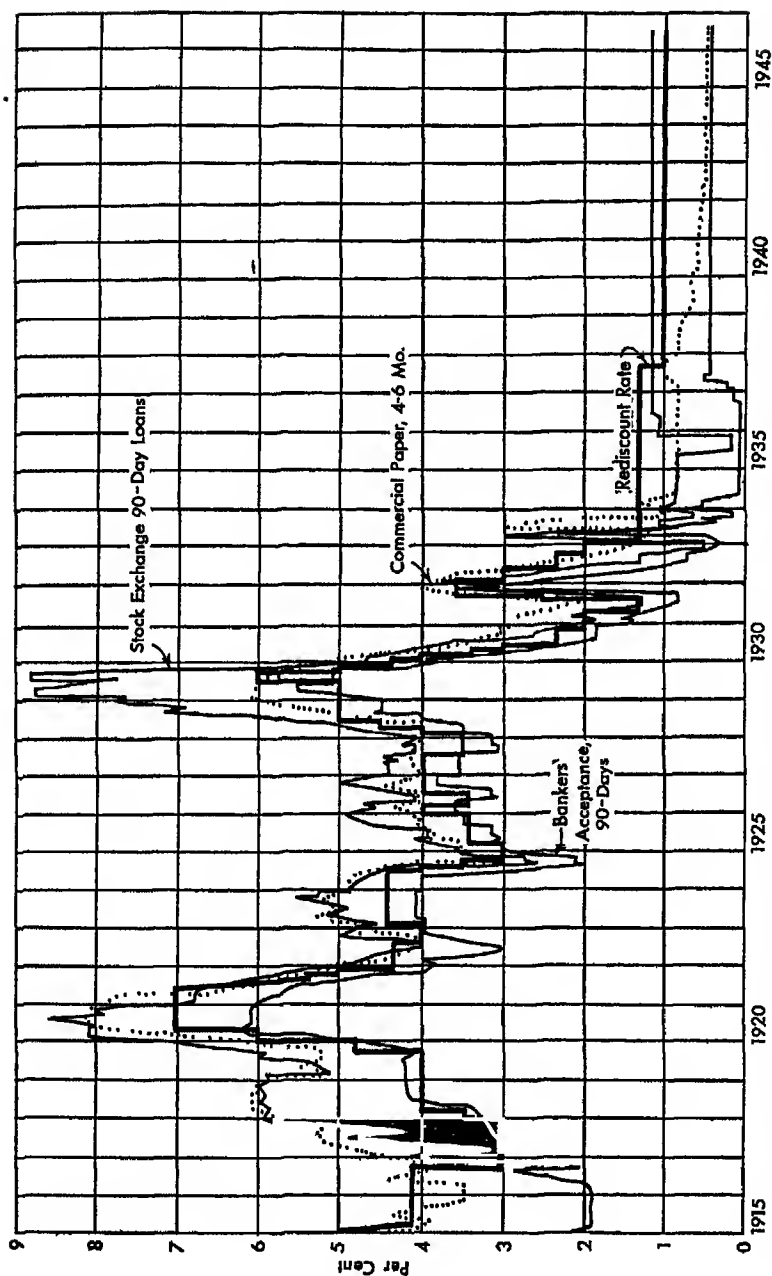


FIG. 20.—Rediscount Rate and Money Market Rates, 1915-1941. (New York Reserve Bank rate on discounts of eligible paper; 4-6 month commercial paper, 90-day stock exchange loans, and 90-day bankers' acceptances. Data from *Banking and Monetary Statistics* and *Federal Reserve Bulletins*.)

ready been explained ¹ how open-market purchases of securities add to bank reserves and how sales reduce bank reserves. When the reserve banks purchase in the open market and banks obtain additional reserves as a result, they use these reserves first to get out of debt at the reserve banks if there is any indebtedness. Open-market purchases thus encourage banks to make additional loans to their customers or

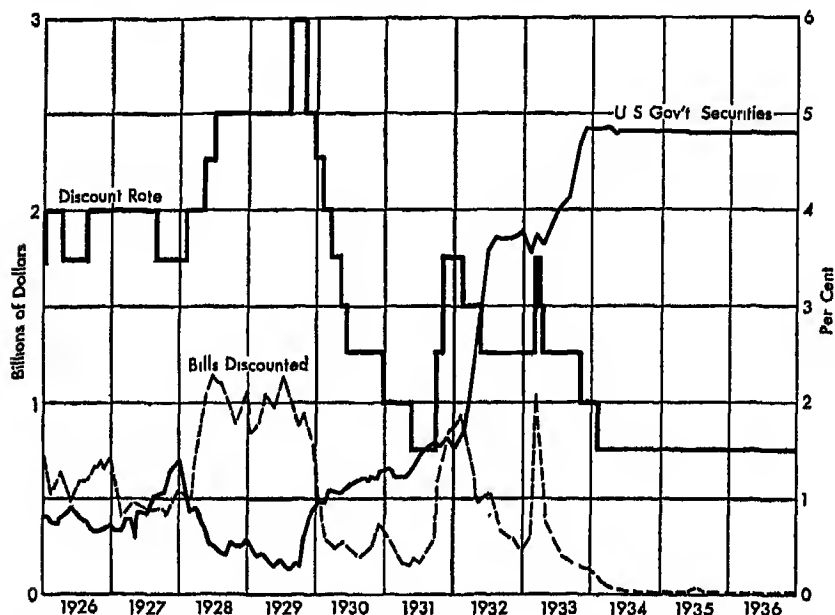


FIG. 21.—Reserve Banks' Holdings of Discounts and Government Securities, and the Discount Rate, 1926-1936. (*Banking and Monetary Statistics*.)

in the money market first by permitting them to reduce their rediscounts and then, if the purchases are sufficient, by providing additional reserves.

When the reserve banks (as decided by the Open Market Committee) make open-market purchases, they do so in order to build up bank reserves and encourage lending, so it is natural that at such times the rediscount rate is also lowered. The relationship between rediscounts, open-market holdings, and the rediscount rate is shown in Figure 21. It will be observed that when open-market holdings increase rediscounts go down, and the rate is lowered.

¹ Page 246.

This relationship was discovered in practice in 1922. At that time the reserve banks wished to increase their holdings of earning assets in order to increase their earnings, so they purchased government bonds. Their earning assets did not increase, however, because the banks reduced their rediscounts as fast as they got the additional reserves. The relationship had been recognized theoretically prior to 1922, but it had not been illustrated by American experience.

The reason for the establishment of the Open Market Committee was that the twelve different reserve banks might be pursuing different open-market policies. If one bank bought and another sold, they might merely offset the effects of each other's transactions. Most of the transactions would probably take place in New York, and the sale of a large block of securities by the Federal Reserve Bank of Dallas might lead to rediscounting at the Federal Reserve Bank of New York. The Open Market Committee coordinates the transactions of all the reserve banks, and the purchases and sales are made by the Federal Reserve Bank of New York for the account of the whole system.

The effectiveness of open-market operations, like that of the rediscount rate, depends upon the extent of excess reserves. During the late 1930's member banks had far more excess reserves than the reserve banks had bonds. The reserve banks could have sold all of their open-market holdings, and the banks would still have had excess reserves. A complicating factor in open-market operations is the needs of the Treasury. If the Treasury is attempting to sell a large volume of new bonds, as was the case just before and during the war, open-market sales by the reserve banks would make the job more difficult for the Treasury. Such a situation further influenced the reserve banks during the late 1930's.

There may also be a situation, such as in 1929, when the reserve banks have no securities but the banks have a large volume of eligible paper. The member banks are thus in position to borrow at a time the reserve banks oppose it. The reserve banks could and did raise their rediscount rates, but could not reinforce that weapon by open-market sales.

These three instruments of control—change in reserve requirements, change in rediscount rate, and open-market operations—are thus interconnected. They are usually used in conjunction with each

other rather than separately. While the first instrument does not change the volume of total reserves, it does change the volume of required reserves, and the second two are used to influence the volume of total reserves. Thus with a given required reserve ratio, rediscount operations and open-market operations affect the volume of required reserves.

Three other instruments of control have been developed to bolster up those already described, when circumstances have made the latter ineffective or to meet particular problems which the first three do not specifically cover.

Direct Pressure

Direct pressure, sometimes called "moral suasion," simply consists of efforts on the part of reserve officials to persuade the member banks to follow certain policies. It has been pointed out that a reserve bank may refuse to rediscount for a member bank not only because the paper offered by the latter is unacceptable, but because the reserve bank considers the bank's loans improper. Thus a bank that ignores the tradition against borrowing and attempts to maintain a higher volume of loans through use of reserve bank credit probably would be refused additional rediscounts. When the banking community in general may be overextended in the opinion of the reserve officials, the latter may urge banks in general to reduce their outstanding loans, or some particular types of loans.

An outstanding example of the use of moral suasion took place in 1928 and 1929 when the banks were making unusually large brokers' loans. In an effort to reduce the amount of speculation in stocks, reserve officials urged member banks to reduce their brokers' loans. As explained more fully in Chapter XXIV, the instruments of the rediscount rate and open-market sales were insufficient to accomplish the Board's purposes at that time.

This type of pressure may be considered to be more a *banking* policy than a *credit* policy, in that it is concerned more with the types of bank assets than with their volume. In other words, the reserve officials may be primarily interested in the "quality" of bank loans. The effort in 1929 to reduce the volume of brokers' loans can be classed as an instance of qualitative credit control, in contrast to, say, the increase in reserve requirements in 1937, which was quantitative. The

conflict that may arise in such matters is illustrated by the over-all decline in demand deposits during 1929 at the same time that brokers' loans were increasing. If the reserve officials had at that time used the volume of money as their main criterion, they would have instituted an easy money policy; as it was, they maintained high rediscount rates and bolstered them with moral suasion, because they were more concerned with the uses of bank credit than with the amount of it.

Control of Margins

The 1929 stock-market crash led to establishment of another instrument of credit control, namely control by the Board of Governors over margin requirements. Various investment-banking and stock-market practices were brought under control in 1933 and 1934. The Securities Exchange Act of 1934 provided that the Board should prescribe the amounts of margin required for the purchase of securities; they could limit the proportion of the purchase price that brokers and dealers could lend their customers and the proportion that banks could lend to their customers for purchase of securities. The original law set up the first limits, which now have only historical significance, since the Board has altered them several times since 1934. In January, 1946, the requirement was raised to 100%, the Board requiring for the first time that no loans be made for this purpose. They were again allowed in January, 1947.

This instrument of control, of course, is directed to a specific problem of credit policy and, again, is more qualitative than quantitative. The total volume of bank credit might not be much affected by these restrictions, although loans for the specific purpose of security purchase would be substantially affected. Even so, leaks can take place, in that a bank customer might borrow a sum of money on his unsecured note and use the proceeds for stock purchases, with or without the bank's knowledge. More indirectly, an individual might borrow for a business purpose and use the funds for that purpose, but he might buy stocks with other funds which he would have used in his business if he had not obtained the bank loan.

Installment Credit

Another type of restriction upon specific types of loans was instituted in 1941 as a result of the growing problem of scarcities and in-

flation. This was the restriction on installment credit which might be granted by sellers and on installment loans made by banks. When a person buys an article on installments he is not enabled to buy more than he otherwise could buy, although he may buy the article sooner. If, however, the banks provide a growing volume of loans for installment purchases (either lending to sellers who have granted credit or lending to the customers) the volume of such sales rises. Such was the case in 1941, and the articles commonly sold on installments were particularly subject to wartime scarcities. Such things as refrigerators, automobiles, pianos, and the like contain large quantities of metal required for war. The result was a strong inflationary pressure on the prices of these commodities. The first restrictions were relatively mild, but during the war more stringent ones were ordered. These restrictions took the form of larger required percentages as down payment and shorter time for final payment.

Member Bank Reserves, Reserve Bank Credit, and Related Items

This section summarizes the preceding discussion of the reserve banks and the money market. It takes up the interrelationships between member bank reserves, reserve bank credit, and certain other items that affect the volume of either or both of the first two. Member banks individually obtain reserves primarily through deposits. Various factors determine whether deposits flow into or out of the banking system. If the public is hoarding cash, for example, banks lose reserves to the public. Member banks, in the second instance, obtain reserves through extensions of Federal reserve credit, which may increase through rediscounts, bills bought, or open-market purchases. Hence, it is possible to group all of these factors in one summary and discover their net effects upon the volume of member bank reserves.

Supply of Reserve Funds

There are three factors that may be considered the supply of reserve funds. These are (1) reserve bank credit, (2) the gold stock, and (3) Treasury currency. When any of these items increase, member bank reserves tend to increase; hence, they are called *factors of increase*. Rather than actually increasing reserves, they may be offset by *factors of decrease*, described below. The ways in which increases

in reserve bank credit increase bank reserves have been described previously. An extension of a loan, for instance, by a reserve bank to a member bank, clearly increases the bank's reserves. The reserve banks may purchase bills or government securities, either directly from the member banks or from the public, adding to member bank reserves in this manner. When banks do not have large excess reserves, any general increase in bank loans tends to force the banks to rediscount, and to liquidate assets, as they generally do not wish to be in debt. If the reserve banks wish to sustain the volume of bank loans, they make it easy for the banks to liquidate by purchasing in the open market. If the reserve banks wish to reduce the volume of bank credit, open-market sales will force the banks to liquidate secondary reserves or to rediscount, with the result that they shortly will try to reduce their loans and investments.

On the other hand, if the member banks have a large volume of excess reserves, changes in their reserve requirements stemming from changes in deposits are more likely to be reflected in increases or decreases in their excess reserves. A general increase in loans and investments, leading to increased bank deposits and increased required reserves, merely reduces their excess reserves. During the 1920's banks had very little excess reserves as a group, and periods of rising bank loans or investments were accompanied by increased rediscounting and open-market purchases by the reserve banks. In other words, reserve bank credit outstanding fluctuated with the reserve requirements of the banking system. During the late 1930's, the banks had unprecedented excess reserves and they got out of debt to the reserve banks. The key figure in analyzing credit conditions then became the volume of excess reserves. Later, during the war, banks tended to lose reserves, and also their tremendous investments in government securities led to increased deposits which required reserves. During this period excess reserves were used up—became required reserves—and the reserve banks provided more reserves, largely through open-market purchases. For example, reserve bank credit increased from \$2,267,000,000 on June 30, 1941, to \$22,211,000,000 on June 27, 1945, an increase of \$19,944,000,000. This was accompanied by an increase of \$19,509,000,000 in reserve bank holdings of government securities, which rose from \$2,184,000,000 to \$21,693,000,000.

Increases in the gold stock tend to increase bank reserves simply because the proceeds are normally deposited in banks. When gold is imported for monetary purposes, it is sold to the Treasury which then prints gold certificates which it deposits in its account at the reserve banks. The banker or individual who sold the gold to the Treasury deposits the check he received for it in his bank, with a resulting increase in the reserves of that bank. During the 1930's gold was imported to this country in huge quantities partly because exchange rates were favorable and partly because of unsettled political conditions abroad. The gold stock rose from \$4,000,000,000 in 1932 and 1933 to \$22,500,000,000 in 1941. This increase in gold caused the unprecedented volume of excess reserves that arose during this period. During the war there was a net decline of over \$2,000,000,000 in the gold stock, representing a drain on bank reserves.

In a similar manner increases in government credit money (Treasury currency) also tend to increase bank reserves. When the Treasury buys silver and coins it or issues silver certificates, people have cash, which they may deposit in banks, or which they may use in place of cash which they otherwise would have withdrawn from the banks. The Treasury of course may deposit the new money.

Use of Reserve Funds

An increase in factors of decrease tends to reduce bank reserves, or to be offset by factors of increase. When money in circulation increases, individuals and businesses withdraw money from their banks. Banks carry a supply of till money to meet discrepancies in day-to-day deposits and withdrawals of cash, but when withdrawals persistently exceed deposits they must withdraw currency (usually Federal reserve notes) from the reserve banks. This, of course, reduces their reserve balances. During the war years there was an extremely large increase in the volume of money in the hands of the public, as described in Chapter XV.

Treasury cash is the gold bullion, silver and other coins, and currency held by the Treasury, not counting metal held as 100% reserves for gold and silver certificates. Normally, this item does not have a great effect on bank reserves, but it is clear that if the Treasury accumulates cash, there is that much less cash for the banks. During the late 1930's, the Treasury followed a policy of allowing its cash to

rise when gold was imported, in order to mitigate the increase in excess reserves. When it purchased gold, it did not issue gold certificates for deposit in the reserve banks, but paid for the gold with deposits that it held in member banks. As mentioned above, the Treasury borrowed these funds. Thus member bank deposits were merely transferred from the Treasury to the sellers of the gold; the volume of deposits, and therefore of reserves, was unaffected while this policy of "gold sterilization" was in force.

The Treasury deposits at the reserve banks tend to fluctuate with government receipts and expenditures. In normal times the Treasury obtains funds on certain tax dates and spends funds at a fairly regular rate. When tax payments are made, the Treasury obtains checks drawn by taxpayers on their bank accounts, and the clearance of these checks shifts funds from the reserve balances of the member banks to the Treasury deposit, thus reducing bank reserves. Treasury expenditures, of course, result in reverse movements. Similarly, when the government borrows, it obtains funds which reduce bank reserves.² During the war the Treasury balance fluctuated sharply with the various war loans, as well as with higher taxes. The flotation of an issue of war bonds tended to shift funds from member bank reserve balances to the Treasury deposit. However, these transactions were temporary, in that the Treasury spent the money shortly after receiving it. The banks might have had to turn to the reserve banks to make up their reserve requirements, but Treasury disbursements promptly showed up again as bank deposits, giving the banks the funds with which to retire their indebtedness. As a rule, the Treasury left funds with the commercial banks until they were to be spent in order to reduce this shifting of reserves.

Nonmember balances exert similar influences on member bank reserves. Nonmember banks carry balances for clearing purposes, and if nonmember banks gain from member banks in the clearing and collection process their balances rise and those of member banks fall. Also included in this item are the deposits of foreign banks and the account of the Stabilization Fund, owned by the Treasury. The item "other Federal reserve accounts" makes up all the other minor forms in which funds are added to or withdrawn from the money market;

² This is true if the Treasury moves its funds to the reserve banks but not if it leaves the funds on deposit with the commercial banks, as was often done during the war.

for example, a business firm might be granted a deposit at the reserve bank.

Financial changes during the war are taken up in a later chapter, but a survey of the interactions of the factors here discussed illustrates the nature of the money market. Changes in member banks' reserves during the war years are summarized in these figures:

	(millions of dollars)		
	1941	1945	Change
Reserve balances	13,051	14,760	+1,709
Required	7,841	13,398	+5,557
Excess	5,210	1,362	-3,848

It is noticeable that the increase in required reserves is approximately the same as the amount of excess reserves existing in 1941, over \$5 billion. Total reserves increased by \$1,709,000,000, so the member banks ended the war period with excess reserves about equal to the increase. In other words, they met the increased reserve requirements by a shift in their excess reserves to required reserves to the extent of \$3,848,000,000 plus additional reserves of \$1,709,000,000.³

Much larger figures than these, however, contributed to these net results. As explained earlier in the chapter, reserve bank credit was increased greatly and this in turn was largely offset by an increase in money in circulation of over seventeen billion dollars. The principal item of increase was reserve bank credit, but the decline in gold stock of over two billion dollars was important. The net effect of these two items of increase—one increasing, the other decreasing—was about the same as the factor of decrease, money in circulation. Compared to changes in these three items, the others were minor. The function of the reserve banks as a source of reserve funds is dramatically illustrated by these figures. The impossibility that the banking system could have obtained the required reserves and met the rise in money in circulation without recourse to the reserve banks is obvious.

Member Bank Reserves in 1933 and 1934

To illustrate this discussion of the factors of increase and the factors of decrease, Table 28 has been constructed to show the factors

³ During this period reserve requirements were changed from double the statutory percentages to 20%, 20%, and 14% in central reserve cities, reserve cities, and country locations respectively.

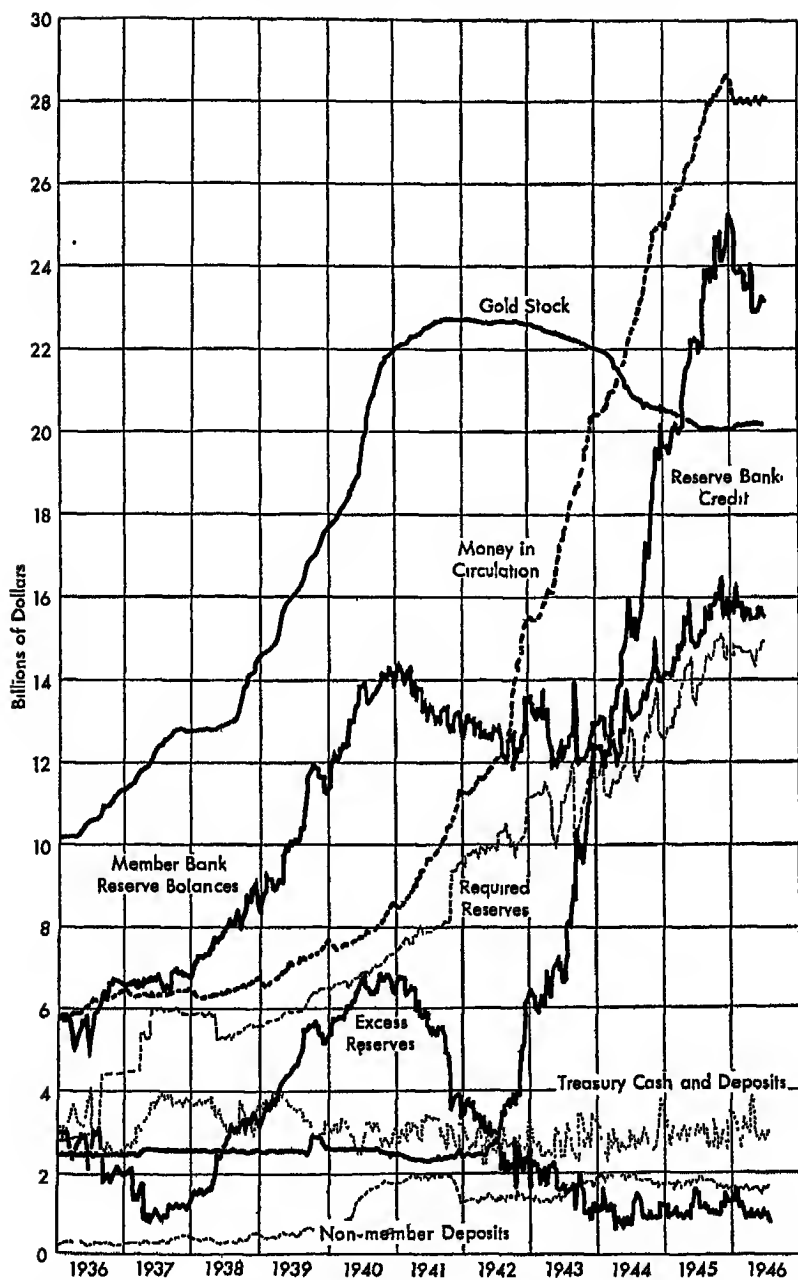


FIG. 22.—Member Bank Reserves and Related Items, 1936–1946. (*Federal Reserve Bulletins.*)

that caused changes in member bank reserves from March, 1933 to December, 1934. This period was an important one in the history of banking and monetary developments in the United States, and the facts shown in this table will be useful to refer to during the discussion of this period in Chapter XXVII.

TABLE 28

MEMBER BANK RESERVES AND RELATED ITEMS
MARCH, 1933 AND DECEMBER, 1934

(millions of dollars)

"Related Item"	March 1933	December 1934	Net Change
Factors of increase:			
Reserve bank credit:			
Bills discounted	447	7	- 440
Bills bought	305	6	- 299
U.S. gov't securities	1,838	2,430	+ 592
All other	3	20	+ 17
Total	2,593	2,463	- 130
Gold stock	3,995	8,238	+4,243
Treasury currency	2,289	2,511	+ 222
Net change in factors of increase			+4,335
Factors of decrease:			
Money in circulation	6,033	5,536	- 497
Treasury cash holdings	364	3,029	+2,665
Treasury deposits	41	121	+ 80
Nonmember deposits	143	189	+ 46
Other Federal reserve accounts	348	241	- 107
Net change in factors of decrease			+2,187
Member bank reserves:			
Total	1,949	4,096	+2,147
Excess	249	1,814	+1,565
Increase minus decrease: $4,335 - 2,187 = 2,148$			

Source: *Banking and Monetary Statistics*, p. 376.

During the period shown in this table the three factors of increase increased by \$4,335,000,000. This figure resulted from a small decline in reserve bank credit outstanding that was much more than

offset by a large increase in the gold stock and a small increase in the amount of Treasury currency outstanding. The decline in reserve bank credit, in turn, was the result of the maturing ("running off") of most of the bills held by the reserve banks, which were not replaced entirely by new purchases of government securities. Thus we may say that the increase in the gold stock tended to increase member bank reserves by over \$4,000,000,000 and that changes in the other two factors of increase were not very important by comparison.

The increase in the gold stock was offset, however, to a large extent, by increases in the factors of decrease. The largest item depriving the member banks of reserves was the increase in Treasury holdings of cash, \$2,665,000,000. Member bank reserve balances during this period also shifted slightly to Treasury balances and to nonmember bank balances. On the other hand, member banks gained reserves because money in circulation declined and because "other Federal reserve accounts" (balances of nonmember banks, foreign banks, and the Stabilization Fund) also declined. Thus, on balance, the loss of reserves through the factors of decrease amounted to \$2,187,000,000. Consequently, the net change in member bank reserves, the difference between the changes in the factors of increase and the factors of decrease, was a net increase of \$2,147,000,000. Member banks' reserves accordingly rose from \$1,949,000,000 to \$4,096,000,000. Whereas the member banks had very little excess reserves in March, 1933, they held nearly \$2,000,000,000 of excess reserves at the end of 1934. The entire increase in reserve balances was not excess reserves because deposits increased in the interval, partly from deposits of gold and partly from an increase in bank loans and investments. (The increase in reserves of 2,147 and the difference between the factors of increase and the factors of decrease of 2,148 would be identical except for the slight arithmetical error arising from dropping the last six digits in all the figures.)

XIX

SAVINGS INSTITUTIONS

BANKS and other similar institutions dealing primarily with the funds saved by their customers are of several different types. Predominant in this branch of the banking business are the saving banks, the time-deposit business of commercial banks, and savings and loan associations. Numerous other institutions collect savings and channel them into the hands of users; the insurance companies and investment bankers could be so described. In this chapter, however, we will expand the preceding description of commercial banks to cover some of the institutions that are primarily concerned with the collection of savings deposits or time deposits and the investment of these funds. Most of the chapter is devoted to mutual savings banks, with points of similarity in other institutions brought out in the remainder.

Savings Banks

Savings banks differ from commercial banks not only in that they specialize in accepting savings deposits and investing the funds appropriately, as their name implies, but also in that the field is dominated in some areas by the mutual type of organization. Mutual savings banks exist in seventeen states. With this type of organization

there are no stockholders, the depositors being the owners of the banks, just as the policyholders in a mutual insurance company are the owners of their company. There is thus no capital stock outstanding,¹ and the bank earnings are divided between surplus and dividends for the depositors.

History of Mutuals

Since mutual savings banks were not originated by stockholder-investors, we must search elsewhere than in the profit motive for the reasons for their establishment. To a large extent the reason was philanthropy. When a class of wage earners began to appear, there arose a problem of providing them with a safe place for their money savings. Such names as that of the Society for the Prevention of Pauperism appear frequently in the early history of savings banks in this country. The idea of savings banks had originated in Germany, England, and Scotland when such societies as the one just named were seeking ways of providing means of saving for the workingman.

The first savings banks in this country were started in 1816, in Philadelphia and Boston. In 1817 Governor Clinton urged the establishment of a savings bank in New York, pointing out that heavy taxes for poor relief depressed real-estate values. "That, which has a tendency to ameliorate the condition of this portion of our citizens, must, of necessity, improve their morals, and diminish the number of paupers, while it augments the means of supporting them," he urged.² The Provident Institution for Savings, already established in Boston, informed the organizers in New York that,

The greatest good is, in affording the humble journeymen, coachmen, chamber-maids, and all kinds of domestic servants, and inferior artisans, who constitute two-thirds of our population, a secure disposal of their little earnings, which would otherwise be squandered, or unwisely lent to petty fraudulent dealers, on a promise of usurious interest, which is three times out of four wholly disregarded. More than a hundred instances have occurred in our experience, of such losses, by lending to neighbors or cousins; and these operate as the most powerful argument, with that class of people, to come to the Savings Bank.

¹ A minor exception is emergency capital supplied by the RFC. A variation of the mutual principal is the guaranty type of savings bank, of which there are a few in New Hampshire. In this type of savings bank, "guarantee" deposits are accepted which are similar to capital.

² Emerson W. Keyes, *History of Savings Banks in the United States 1816-1877*, New York, 1878, I, p. 311.

Some examples of abjuring spiritous liquors, and laying up what was worse than wasted, have encouraged us.³

Similarly, one of the early banks, located in Baltimore, reported that,

We have an Irishman, a hard-working stone mason, who has deposited 500 dollars, at 3 different times. Several free blacks, have, from time to time, deposited 100 dollars, and more. We have several instances of women, who, during the whole summer deposited a dollar per week. This is the most desirable kind of depositors, for all this is saved from luxury and dress.⁴

Women were also the main depositors in the "Institution for Savings in the Town of Salem and its Vicinity," where they constituted three-fourths of the depositors, "sailors are not disposed to deposit their earnings, which if husbanded at all, can be turned to greater advantage, when taken with themselves as adventures on their voyages." ⁵

These references to early banks illustrate the concern of the philanthropist for the poor, not only for altruistic reasons but to reduce the load of poor relief. In more modern times the founders of savings banks may have had other motives as well. The incorporators of a savings bank usually became the first board of trustees, which then became self-perpetuating. The trustees receive little or no compensation for their work, but the prestige is often a sufficient attraction. In addition, related business may be created for another firm in which a trustee is interested, such as a real estate company or law firm.⁶ As in any other bank, the trustees (acting as directors) choose the officials to manage the bank. The banks are not mutual with respect to management, the depositors having no voice in management policy.

Although the early beginnings of mutual savings banks were

³ "Documents Relative to Savings Banks, Intemperance and Lotteries," Society for Prevention of Pauperism, 1819, p. 4.

⁴ *Ibid.*, p. 7.

⁵ *Ibid.*, p. 10.

⁶ "I hope and believe that the flagrant cases have been eliminated. I hope that we no longer have instances where the policy as to the size of cash reserves is determined by the interest of some trustee related to a depository bank rather than by the liquidity requirements of the savings bank itself; where the mortgagors are requested or compelled to insure their properties through an agency in which some relative of a trustee has an interest; or where borrowers may obtain better terms, or have their defaults excused, through the intervention of a friendly trustee." Charles A. Miller, "Duties and Responsibilities of Savings Bank Trustees," *Savings Bank Journal*, Sept., 1942, p. 9.

humble, the idea was popular, especially in New England and New York, and the banks grew rapidly in number and deposits. From ten banks in which 8,600 depositors had \$1,140,000 in 1820, the number increased to 108 banks in 1850, 652 in 1900, and 606 in 1930, by which last date there were nearly 12,000,000 depositors with over \$9,000,000,000 on deposit. Average deposits had thus grown from \$132 to \$772, and they grew further during the 1930's as will be discussed below. The number of banks has now been declining for some time, largely as a result of mergers.⁷

Deposits

It has already been pointed out that the mutual savings bank has catered historically to the depositor of small means. In consideration of this fact legislation concerning savings banks has usually granted them certain privileges and also imposed certain restrictions. There is typically a maximum deposit set by state law. Thus, in New York State, a depositor may not have more than \$7,500 on deposit in a mutual savings bank, although there is no ban on his having deposits in more than one bank. One reason for this provision is that wealthy people might sell investments when they anticipate declining market values and deposit the funds at savings banks, to be withdrawn when they think the bottom of the market has been reached. This would create a difficult problem of investment and liquidation for the savings banks. That something of the sort takes place is illustrated by the fact that in 1933 88% of the depositors in New York savings banks had balances of less than \$2,500, but only 4.3% with balances in excess of \$5,000 had over a third of all deposits.⁸

⁷ The life-insurance functions of savings banks also deserve mention although they are separate from the banking functions. Savings-bank life insurance was instituted in Massachusetts thanks to a large extent to the efforts of Louis Brandeis. The savings banks have been able to sell life insurance in small amounts at surprisingly low cost, partly owing to the preferred risks found among depositors and partly because of the utilization of existing equipment and personnel. In New York the limit a policyholder may obtain from one bank is \$1,000, with an over-all limit of \$5,000. The system is designed primarily to supplement the services of ordinary companies and not to displace them. In Massachusetts the same limit of \$1,000 from a single bank applies, but a policyholder may obtain a policy from each of the 21 banks that sell policies. The standard authority on savings-bank life insurance is Ed Berman, *The Massachusetts System of Savings Bank Life Insurance*, U.S. Dept. of Labor, Bulletin No. 615.

⁸ I. Bussing, address before Eastern Regional Conference of American Bankers Association, March, 1939, "Deposit Account Analysis." Quoted by W. S. Steiner and M. Shapiro, *Money and Banking*, New York, Henry Holt and Co., 1941, p. 335.

Savings-bank deposits are relatively inactive. Especially in the early history of the banks many depositors saved for their old age and retirement, with the result that they seldom made withdrawals. In more recent years, a larger proportion of savings has been made for specific objectives—education of children, purchase of durable goods, and the like—with withdrawals being made for such purposes. Rapid growth in deposits, however, was due to the perennial excess of new deposits over withdrawals. The savings banks therefore have usually found a very small cash reserve to be adequate. Although the rate of growth has apparently slowed down considerably since 1930, it is seldom that withdrawals exceed new deposits for any long period.⁹ Withdrawals show a pronounced seasonal variation, as funds are withdrawn at quarterly periods for such purposes as tax payments and for personal expenditures that are affected by the seasons—clothes in the spring and fuel in the fall, for example. Fortunately for the savings banks, new deposits are also heavy at the same time, probably because interest and dividend payments and similar incomes are deposited.¹⁰

Deposits during the War

Before the outbreak of war for the United States in 1941, the growth of deposits in the savings banks, as measured by experience in New York State, had slowed up to the point where the increase was caused by the dividends credited to depositors' accounts out of earnings. Withdrawals would otherwise have caused a slight decline in total deposits. In 1941 withdrawals were sufficiently great to cause a net decline, which exceeded the gains of 1940 and 1942.

Thus there was a small decrease in deposits between the end of 1939 and the end of 1942, as consumers first utilized increased incomes to repay debts and to acquire consumers' durable goods and then drew on their savings accounts to purchase war bonds. But since 1942, as the country became more fully mobilized for war, consumers' durable goods have largely disappeared from the market and many nondurable goods have become scarce. Incomes, however, have continued to grow; and many people have had little alternative but to save in one form or another.¹¹

⁹ W. Welfling, *Savings Banking in New York State*, Duke University Press, 1939, Chapter X.

¹⁰ *Ibid.*, p. 153.

¹¹ Federal Reserve Bank of New York, *Monthly Review*, Sept., 1945, p. 67.

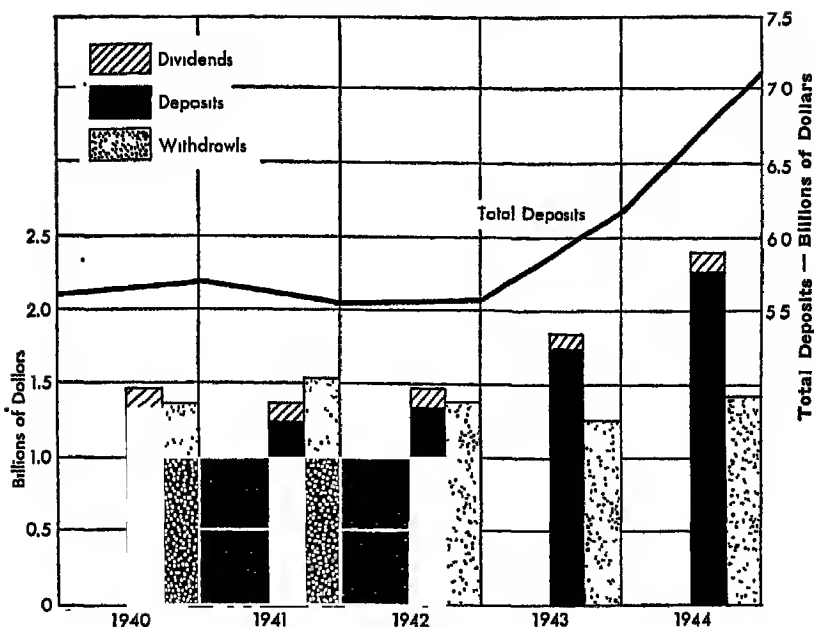


FIG. 23.—Deposits, Withdrawals, and Dividends in New York State Savings Banks, 1940–1944. (Federal Reserve Bank of New York, *Monthly Review*, September, 1945, p. 67.)

The growth of savings-bank deposits was relatively slower than that of certain other evidences of saving, such as war bonds and savings and loan shares. One important reason was the relatively smaller rate of return paid by the savings banks. With their assets very largely in the form of government securities, their earnings after expenses naturally could hardly exceed the rates paid by government securities. The prevailing rate paid by New York mutuals was $1\frac{1}{2}\%$, compared to the 2.9% earned on war savings bonds held to maturity. Similarly, the rate paid on savings and loan shares during the war was generally about $2\frac{1}{2}\%$. The great advantage once held by the savings banks, their excellent safety record, has become less important in attracting deposits since deposits of commercial banks and shares of savings and loan associations have become insured up to the \$5,000 limit.

Investments

Turning our attention to the question of what the savings banks do with the funds deposited with them, we find that there are two

principal uses for these funds: bond investments and mortgage loans. Sometimes one and sometimes the other of these two types of assets is larger, but the two together comprise a very large part of the total assets. This is shown in Table 29 for the mutuals of New York State.¹²

TABLE 29

TOTAL ASSETS OF NEW YORK STATE MUTUAL
SAVINGS BANKS,
1939 AND 1945
(millions of dollars)

Assets	Dec. 31, 1939	June 30, 1945
Bonds	2,396	5,310
Mortgages ¹	3,350	2,773
Cash and bank balances	459	333
Banking house, etc.	180	141
Total	6,385	8,557

¹ Includes real estate taken in foreclosure.

Source: F. R. B. of N.Y., *Monthly Review*, Sept., 1945, p. 67.

The bond investments of the mutual savings banks are rigidly controlled through the state banking law. Until 1938 in New York State the only securities eligible to be placed on the "legal list" were those meeting the detailed requirements of the banking law. In contrast to the commercial banks, which may buy any bond that will be approved by the bank examiners, savings banks can buy only eligible bonds. The reason for the law is, of course, the protection of the small depositors whom the savings banks traditionally serve.

Many of the qualifications that bonds must meet are complicated, and a detailed survey is not necessary for our purposes. Brief comment is included in the following list of bonds eligible in New York State:

1. United States government bonds. No restrictions.
2. State bonds. Bonds of New York State and of other states that have not defaulted in 10 years.

¹² New York State is usually representative, although not completely so, of mutual savings banks in general because the banks of that state have about half of the deposits and assets of all mutual savings banks, although there are more of these banks in Massachusetts than in New York.

3. Municipal bonds. Here separate qualifications must be met by municipalities in states adjoining New York and other states, dealing with default record, percentage of debt to assessed value, and size of population.

4. Railroad bonds. Restrictions cover minimum length of road, earnings for the past six years, and fixed charges, which must be covered $1\frac{1}{2}$ times in five of the last six years, including the preceding year.

5. Public utility bonds. Restrictions as to earnings and several other qualifications. Public utility bonds were added to the legal list in the 1920's.

6. Bonds of the Federal Land Banks, intermediate credit banks, Farm Mortgage Corporation, Home Owners' Loan Corporation, Federal Home Loan Banks, Savings and Loan Bank of the State of New York.

7. Promissory notes payable in 90 days, if secured by bonds eligible for investment or a savings-bank passbook.

8. Bankers' acceptances.

9. Corporate bonds approved by the State Banking Board.

Items 7 and 8 do not comprise a large proportion of a savings-bank portfolio, but are provided for liquidity. Item 9 was added as a result of the experience of the depression of the 1930's. At that time it became apparent that the legal list was no insurance against the purchase of inferior securities, and also that superior securities were sometimes barred from it. Many provisions of the law had to be suspended for several years. The legal list, of course, has always limited the exercise of discretion on the part of savings bankers, but the majority have approved the list in the belief that it helped to maintain the admirable record of safety of the banks. However, in the search for high-grade securities during and after the depression it appeared desirable to provide a mechanism for admitting industrial and other bonds that were not included in the banking law, and in a way that was more flexible than amending the law each time. Hence, it was provided that, upon the recommendation of twenty banks, the Banking Board might approve such additions to the legal list.

In recent years savings bankers and supervisory officials have discussed the desirability of abandoning the legal list in favor of the

prudent man rule of common law, under which savings banks could make any investment a prudent man would make with his own funds. In Maryland there is no statutory restriction on savings bank investments. Although other factors than this one probably influence the differences, a comparison of the ten savings banks in Baltimore with those in New York State shows that the former have even a higher proportion of their assets in government bonds. The absence of statutory restrictions has not led the Baltimore banks into even as much mortgage lending as is done by New York banks under the banking law. As has been mentioned, the mortgage loans of New York banks exceeded their bond investments for many years prior to 1942. The Baltimore banks also maintain a higher cash reserve in relation to their deposits. One difference is in the nongovernment bonds, in which the New York banks now hold a very minor portion of their assets. On the whole it would seem that the presence or absence of a legal list makes considerably less difference than other factors, such as local demand for mortgage loans, stability of deposits, and size of bank, in the investment policies followed.

TABLE 30

ASSETS OF BALTIMORE SAVINGS BANKS AND
NEW YORK STATE SAVINGS BANKS,
DECEMBER 31, 1943
(millions of dollars)

Asset	Baltimore		New York State	
	Amount	Percent	Amount	Percent
U.S. gov't	205.7	71.1	3,136	45.5
Real estate and mortgages	23.4	8.1	2,913	42.3
Other bonds	30.0	10.3	224	3.3
Cash	23.6	8.1	471	6.9
Other	6.1	2.4	144	2.0
Total	288.8	100.0	6,888	100.0

Source: Statements of Condition and Superintendent of Banks.

Prior to World War I municipal and railroad bonds were the mainstays of the savings-bank portfolio. By 1920 government bonds were about equal to railroad bonds in volume and exceeded municipals. Bond investments, including governments, declined rapidly as a percentage of total assets during the 1920's while the banks in-

creased their proportion of mortgage loans, as described below. During the depression of the 1930's the decline in building and the deterioration of the market for many kinds of bonds led the banks to build up their government bonds again. During World War II, as might be expected, the holdings of government bonds again rose precipitously. The par values of the main classes of holdings at various dates are summarized in Table 31. The decline in holdings of state and municipal, railroad and utility bonds is striking. State and municipal bonds were 37.1% of total bond investments in 1929 and railroad bonds, 41.7%; in 1943 they were 2.2% and 2.5%. The tax exemption feature of the former drove up their prices, and many savings banks sold.¹⁸

TABLE 31
PAR VALUES OF BOND INVESTMENTS OF
NEW YORK STATE MUTUAL SAVINGS BANKS,
1910-1944
(millions of dollars)

Dec. 31	Total	United States	State and Municipal	Railroad	Utility	Misc.
1910	662	1	407	254	...	¹
1920	1,246	444	402	400	...	¹
1930	1,545	224	558	763	110	13
1940	2,474	1,701	326	324	96	27
1944	4,643	4,425	34	115	48	21

¹ Less than \$1,000,000.

Source: 1940 and 1944, F.R.B. of N.Y., *Monthly Review*, Sept., 1945, p. 67; prior years, W. Welfling, *Savings Banking in New York State*, p. 117.

Banking laws restrict mortgage loans in somewhat the same way as they do investments. In New York State, savings banks may invest 65% of their assets in loans secured by first mortgages on real estate. The loans may not exceed 60% of appraised value for most improved property and 66.6% in the case of residential property. These restrictions do not apply to loans insured by the Federal Housing Administration.

Prior to the expansion of mortgage lending by other institutions in recent years, savings banks were the principal source of such loan

¹⁸ Being mutual, savings banks do not pay the corporate income tax.

funds in the areas where they exist. As mentioned above, the savings banks greatly increased their mortgage loans during the 1920's, having approximately the statutory maximum of their assets in this form by 1930. All during the history of the savings banks prior to 1930 their mortgage record had been excellent, with practically negligible foreclosures and still fewer losses. The Great Depression changed this record, however, and a large proportion of loans were "troubled" during this period.¹⁴ "Other real estate" (foreclosed properties) of the New York mutuals exceeded 12% of their mortgage loans by 1938, while it had been less than ½% in 1930.

The reasons for many of these foreclosures can be summarized as follows: The building boom after World War I led to a considerable amount of lending based on inflated real-estate values. Ten years later the values of these properties could not support the mortgages still on them. The mortgages themselves were seldom amortized, and many of them were as large in 1932 as when made, for example, in 1922. The widespread unemployment of the depression period made it impossible for many people to keep their mortgages in good condition, and the banks had no alternative in many cases except to foreclose. Other prominent real-estate lenders, like the insurance companies, had the same experience.

Mortgage loans fell from 65% of total assets in 1929 to a little less than 50% by 1936. The restrictions on building during the war led to a constant decline in the volume of mortgage loans held by the banks after 1940, so that they constituted about 32% of assets in 1945. The volume of bonds exceeded that of mortgage loans in 1942 for the first time in many years.

A 1945 amendment to the New York banking law permits savings banks to form and finance corporations to carry out housing projects in New York State. This amendment was revolutionary because it allowed for the first time direct participation in real-estate ventures. There is no place for the loan secured by mortgage, since the savings banks will own the corporations contemplated. The savings banks may join among themselves or with the Institutional Securities Corporation (mentioned below) to form the housing corporations, and

¹⁴ A "troubled loan" is one in various stages of delinquency or foreclosure; interest or taxes or both may be in arrears, as may the principal payments, or foreclosure steps may have been taken. For a discussion of the extent and reasons for these troubles, see Welfling, *op. cit.*, Chapters VI and VII.

provide most of the funds required by purchase of debentures. Such investments, however, are limited to 5% of a bank's assets or to half its surplus, whichever is smaller.

Investment Policy

Historically, savings banks have shifted their funds into bond investments or mortgage loans as economic conditions indicated. Similarly, the proportion of assets held in the form of various types of bonds has shifted with changing credit standings and relative availability. The traditional over-all policy of each bank has been to acquire such assets as will best safeguard the depositors' funds. Generally speaking, liquidity and earnings have been secondary considerations. Until fairly recent years the nature of savings bank deposits did not require a high degree of liquidity among the assets, and it was not considered necessary to attract deposits with competitive earnings. Since about 1935 competition in the form of government savings bonds and the shares of insured savings and loan associations has thrown more emphasis on the dividends or interest paid on deposits.

An example of how savings banks may adapt their investment policies to postwar conditions is given in the following figures.¹⁵ If a savings bank assumes that it must pay dividends of about 2.5% annually in order to maintain its deposits, if not gain additional ones, it will need to earn about 4% on its deposits (slightly less on its assets, assuming there is a surplus). If a bank has \$100,000,000 of deposits and \$10,000,000 of surplus, it would have to earn just under \$4,000,000 a year in order to pay a 2.5% dividend (which would be slightly smaller in practice because of withdrawals of some deposits before the dividend dates), plus .75% for operating expenses and .75% to be added to surplus—say a total of 3.95% or \$3,950,000. In order to obtain these earnings and at the same time maintain a desirable degree of liquidity, the savings bank might own:

Cash	\$ 3,000,000
Government bonds	35,000,000
Mortgage loans	66,000,000
Other investments	6,000,000
Total	<u>\$110,000,000</u>

¹⁵ Decoursey Fales, "Investment Policy for Savings Banks," *Savings Bank Journal*, April, 1944, p. 14.

The interest that the bank would have to seek on this array of investments would be :

Government bonds	2.50%	\$ 875,000
Mortgage loans	4.45	2,935,000
Other investments	2.33	140,000
Total		\$ 3,950,000

or some combination of these rates. Such an investment portfolio would provide 3% reserves plus 35% secondary reserves in the form of government bonds and 72% of more purely "earning" assets (110% of deposits). These figures indicate the reliance which savings bank must place on mortgage loans to provide a large share of gross income. They also indicate how the existence of a surplus built up in the past helps to maintain earnings for the current deposit volume.

Central Banking Institutions

Although mutual savings banks may join the Federal Reserve System, as a result of depression emergency legislation, practically none of them have done so. The possibility of heavy withdrawals during the period of hoarding in 1931-1933 and the difficulty of liquidating investments at that time, however, illustrated the desirability of some sort of rediscount facilities for savings banks as well as for commercial banks. The mortgage loans of the banks were even less liquid than the bond investments, since there was no market in which such loans were traded.

Rather than join the reserve system, the savings banks established a sort of reserve bank of their own. Similar procedure was followed in other states as well, but we may again use that followed in New York State as illustration. There, two institutions were set up: the Savings Banks Trust Company and the Institutional Securities Corporation. The Trust Company was designed to be a central bank for the savings banks of the state. The savings banks contributed the capital of the Trust Company, which also had a commitment from the RFC to furnish more if necessary. Additional funds came from the deposits kept there by the savings banks and the United States government. These funds were to be used to make loans to savings banks in trouble on the security of bond investments.

If a borrowing savings bank failed to obtain enough additional

deposits in six months to repay its loan to the Trust Company it could turn to the Institutional Securities Corporation, which would buy mortgages from it. If the mortgage loan was appraised at less than its face value the Corporation would pay the appraised value in cash and give debentures for the remainder. The Corporation's funds came from sources similar to those of the Trust Company, the savings banks themselves, with the promise of more from the RFC if necessary.

The twin institutions were valuable aids to banks in difficulty for a short period. The Trust Company lent \$6,500,000 to its members in 1933, which the latter repaid in 1934. Sixteen banks sold mortgages to the Corporation in 1934, for which they received over \$15,000,000 in cash and \$6,500,000 in debentures. These mortgages were repurchased by the banks during the next few years. As the emergency nature of their operations was reduced, these institutions turned more to providing other services for their members. The Trust Company provides investment advice, buys and sells investments for members, represents the savings banks in reorganization proceedings involving securities held by them, and performs other functions of a similar service nature. The Corporation provides appraisals and other real-estate information, services mortgage loans for members, and, in general, does for the banks in the mortgage field what the Trust Company does in the investment field. The Corporation may sell debentures to the banks and invest the proceeds in mortgages that would be ineligible for savings banks' loans.

One of the stronger objections of the mutuals to joining the reserve system, even as an emergency measure, was their objection to the Federal plan of deposit insurance, which, for a while, was to be required of all member banks. The failure record of savings banks had been so much superior to that of commercial banks that the savings banks objected to paying the same rates of assessment that were charged the commercial banks. Partly to meet the growing public approval of deposit insurance, therefore, they established the Mutual Savings Banks Fund, with the Savings Banks Trust Company as trustee. This fund was for savings banks the counterpart of the Federal Deposit Insurance Corporation for member banks. Annual assessment of one-tenth of 1% of deposits were provided with additional assessments if required. As with the FDIC, the main emphasis of the Fund was to prevent bank failures. If the Superin-

tendent of Banks certified that a savings bank was in danger of failing, the trustee was authorized to take over the management of the bank and to merge it with another or take other action to prevent failure, or, if necessary, to liquidate the bank. To prevent failure the trustee could make loans or "contributions to surplus," to be repaid as conditions permitted. In 1943 the savings banks of New York State gave up this plan and joined the Federal plan.¹⁶ This addition of 121 banks raised to 184 the number of mutual savings banks operating under the FDIC, out of 545 in the country. The 184, however, held about two-thirds of the total deposits of all mutual savings banks.

Stock Savings Banks

Recognition of stock savings banks as such is disappearing. Stock savings banks have been formed like other state banks, but with emphasis upon attracting time deposits. In recent years, however, these banks have been granted powers to transact a commercial banking business, with the result that they have become virtually indistinguishable from other state banks. The Comptroller of the Currency, hitherto the usual source of published statistics on these banks, ceased publishing them in 1935, merging the figures with those for all state banks, on the ground that the type of business done was so similar that distinctions were not meaningful.

Time Deposits of Commercial Banks

Little will be said here of the business of commercial banks in time and savings deposits because of references to it in other connections. Some comparisons may be made of the relative importance of commercial banks and mutual savings banks as holders of time and savings deposits. Such a summary appears in Table 32. This table includes postal savings, which are discussed below. It appears that, of the \$40,000,000,000 increase in time deposits during the 40 years after 1900, about \$24,000,000,000 is accounted for by commercial banks and \$11,000,000,000 by savings banks. The growth has thus been much more rapid for commercial banks. Prior to the establish-

¹⁶ Deposit insurance for mutuale is discussed further in Chapter XXIII.

ment of the reserve system many commercial bankers were doubtful of the legality of accepting time deposits, but the Federal Reserve Act not only specifically recognized such deposits but required lower reserves for them than for demand deposits and permitted mortgage loans. The time deposits of commercial banks include deposits which would not be solicited by savings banks, such as the many time deposits of business corporations and other institutions. These facts constitute some of the reasons for the rapid increase in time deposits of commercial banks; the growth of such deposits in savings banks has been slower but much more steady.

TABLE 32

TIME DEPOSITS IN COMMERCIAL AND
MUTUAL SAVINGS BANKS, AND POSTAL
SAVINGS,
1900-1944
(millions of dollars)

June 30	Commercial Banks	Mutual Savings Banks	Postal Savings	Total
1900	881	2,134	....	3,015
1910	3,636	3,308	....	6,944
1920	10,509	5,168	157	15,834
1930	19,705	9,117	170	28,992
1940	15,540	10,631	1,292	27,463
1944 ¹	24,635	13,340	5,571	43,546

¹ December 30

Source: *Banking and Monetary Statistics*, p. 34; Comptroller of the Currency, *Annual Report*, 1944, p. 119.

Segregation of Assets

Since savings bankers are rigidly restricted in the type of loans and investments in which they employ their funds, it is sometimes contended that commercial bankers have an unfair advantage in operating under more lenient regulations, and, in addition, that savers are not afforded adequate protection for their deposits when the funds thus obtained are mingled with others and used for commercial banking purposes. These arguments have led to proposals that commercial banks maintain separate departments to the extent that assets acquired with time deposits be segregated and be unavailable

for the protection of demand depositors. There is a particular danger that in time of runs on banks demand depositors may be able to withdraw their funds while time depositors may not, owing to the 30-day notice requirement which may be enforced against them. By the time the latter can make their withdrawals, a bank may be insolvent, with only the poorest assets left with which to satisfy the remaining depositors. This danger, however, does not seem so great under present conditions with bank deposits insured by the FDIC up to \$5,000. Some state laws, particularly in California, require segregation of the businesses when state banks carry on both commercial and savings functions under one roof, but this requirement is not imposed on national banks nor on the state banks of most states.

Postal Savings

The postal savings system was instituted in 1910 to provide safe depositories for people of small means, in particular those who mistrusted banks. Although banks opposed the system at first, it has since appeared that the funds that have been deposited with the post offices have been those which otherwise would have been kept out of circulation. Immigrants, in particular, have mistrusted banks and hoarded cash at home, with consequent tragic losses sometimes from fire or theft.

The postal savings depositor is given certificates for such of his funds as are in round dollar amounts, and stamps for funds in amounts less than a dollar. A low rate of interest is paid on funds not withdrawn within a year, or the depositor may exchange his deposit for government bonds issued for the purpose. The certificates and stamps are not transferable but are valid at any post office.

The Post Office Department is required to deposit a 5% redemption fund with the Treasury, and may invest the remainder of the postal savings in government bonds or deposit it in banks. In recent years virtually the whole amount has been invested in government bonds.

Postal savings deposits increased rapidly during the period of uncertainty following the stock-market crash in 1929. In June, 1929, total deposits amounted to less than \$150,000,000, but by the end of 1933 they exceeded \$1,200,000,000. This increase occurred because many bank depositors withdrew their funds and placed them

in postal savings. However, it will be noted that to the extent the Post Office Department redeposited them with banks, the banks as a whole did not lose funds. During the war there was another rapid increase, although not so great proportionately. From \$1,300,000,000 in 1940, postal savings reached approximately \$3,000,000,000 by the end of 1945, as many people who were unaccustomed to dealing with banks received large enough incomes to permit them to save.¹⁷ The postal savings system is particularly useful in some of the island possessions where bank facilities are meager.

Savings and Loan Associations

Savings and loan associations, or, as many are still called, building and loan associations, might well be considered elsewhere in connection with mortgage-loan agencies, but their similarity to mutual savings banks suggests a consideration of them in the same chapter. Building and loan associations are state-chartered institutions which collect savings to be employed, primarily, in making mortgage loans. Capital funds are evidenced by share accounts, which are in practice similar to savings deposits. They are repurchasable by the associations, in much the same way that savings bank deposits are withdrawable—in practice, on demand.

Savings and loan associations are the Federal counterpart of the building and loan associations. Both are usually local institutions providing funds for local home construction. The former were created during the depression to provide a source of loans for home construction especially in those areas where other institutions, such as savings banks, did not predominate. The Federal savings and loan associations are chartered by the Federal Home Loan Bank Board¹⁸ and are members of the Federal Home Loan Bank System; some of them are converted state institutions. The Federal Home Loan Banks operate on much the same principle as the reserve banks, lending to their members on the security of the latter's assets (mortgage loans). Building and loan associations may also join the Federal Home Loan Bank System, as may savings banks and insurance companies.

¹⁷ *Federal Reserve Bulletins*.

¹⁸ Since 1942, when the Board was replaced by a Commissioner, charters have been issued by the latter.

Another point of similarity between these associations and the commercial and savings banks is the insurance of share accounts up to \$5,000 by the Federal Savings and Loan Insurance Corporation. Federal associations are required to carry insurance, and state member associations may also carry it. Like the FDIC and the Mutual Savings Banks Fund, the Insurance Corporation may take measures designed to prevent the failure of member institutions.

Prior to the influence of war conditions, in 1939, there were 1,400 federally chartered institutions and 6,300 state-chartered ones. About 2,500 of the latter were members of the Federal Home Loan Bank System, 800 of these having their accounts insured by the Federal Savings and Loan Insurance Corporation. The state institutions had approximately \$3,000,000,000 of share accounts and held mortgage loans totaling approximately \$2,800,000,000. Mortgage loans of the Federal associations totaled over \$1,000,000,000.¹⁹ During the war restrictions on residential construction upset the normal operations of the associations. They found themselves making more loans for purchase of homes and very few for construction; they also turned to investment in government bonds. At the same time, war-time savings gave them a considerably larger volume of funds with which to work. In New York State alone, for example, the state and Federal associations at the end of 1945 had "about 775,000 members or shareholders, and assets of \$729,000,000 compared with \$442,000,000 in December, 1939."²⁰ While mortgage loans represented nearly all of the assets in 1939, in 1945 they were \$446,000,000 and government securities were \$218,000,000.

Savings and loan associations have attained a leading position on a national scale in the making of mortgage loans. In 1944 they made 34% of all home loans made during the year.²¹ The importance of the Federal savings and loan associations and the state-chartered members of the Home Loan Bank System is shown in the fact that during 1944 they made home loans of \$670,000,000 and \$650,000,000, respectively, while nonmember associations made loans totaling \$136,000,000. By the end of 1944 the assets of member associations approached \$6,500,000,000 while the nonmember associations had as-

¹⁹ *Federal Home Loan Bank Review, Statistical Supplement*, April, 1946, p. 25.

²⁰ F.R.B. of N.Y., *Monthly Review*, June, 1946, p. 53.

²¹ National Housing Agency, *Annual Report*, 1944, p. 82.

sets of approximately \$1,000,000,000.²² These figures compare with the total assets of mutual savings banks of around \$13,000,000,000.

Credit Unions

Credit unions show many points of similarity to the institutions discussed above. They have as a distinguishing characteristic the purpose of pooling the resources of individuals who have some common interest, such as common employment, or fraternal or religious connections. Shares are bought by the members, and the proceeds are used by the credit unions for loans to members.²³

As in the case of building and loan associations, credit unions first had a fairly unsatisfactory early history under state supervision, followed by a period of rapid growth after the establishment of federally chartered institutions.

Nearly 2,500 credit unions were operating under the laws of 38 states and the District of Columbia at the time of the enactment of the Federal Credit Union Act in 1934. New Hampshire authorized the establishment of the first credit union in the United States through a special act of its legislature in the year 1909. Massachusetts enacted the first general credit union law in the same year and with the exception of Delaware, Nevada, New Mexico, South Dakota and Wyoming all states had such laws on their statute books as of December 31, 1944.²⁴

Usually the heads of the respective state banking departments are charged with the supervision of the state institutions and the Federal Deposit Insurance Corporation supervises the federal unions. The shares, however, are not insured by the FDIC. Some idea of the growth and size of credit unions can be gained quickly from Table 33.

The principal common interest of members of credit unions is their employment. Credit unions have developed principally among wage and salary earners. Only 1% are based upon common residential interests and 7% upon fraternal, religious, or professional interest, while 92% have been formed by groups of workers with common employers. Thus it might be expected that most credit unions would

²² *Ibid.*, p. 81.

²³ This discussion is based to a large extent upon the *Annual Report* for 1944 of the FDIC and the articles on credit union activity that appear annually in the October issues of the *Monthly Labor Review*.

²⁴ FDIC, *Annual Report*, 1944, p. 1, fn. New Mexico enacted such a law in 1945.

exist in industrial areas; most are located in New York, Pennsylvania, Ohio, California, Texas, and Connecticut. Some of these credit unions limit the number of shares that a member may hold or the number that may be acquired in a single month. At the end of 1935 the average value of shares outstanding per member was \$19. This average grew to \$69 at the end of 1941 and \$102 at the end of 1944. Thus it was still considerably less than the average savings deposit.

TABLE 33

DEVELOPMENT OF STATE AND FEDERAL
CREDIT UNIONS,
1925-1944

(all figures except for number of
unions in thousands)

Item	1925	1935	1944
Number of credit unions:			
State-chartered	419	2,600	5,051
Federal-chartered .....	...	500	4,048
Number of members:			
State-chartered	108	523	1,723
Federal-chartered .....	...	74	1,303
Amount of loans:			
State-chartered	\$20,100	\$36,850	\$133,971
Federal-chartered .....	...	2,322	144,266

Source: *Monthly Labor Review*, Oct., 1945, p. 734.

Contrary to the experience of other savings institutions, the credit unions experienced a decline in number and in loan activity during the war. The need for these institutions was lessened by the growth in wartime earnings, while the attractiveness of war bonds provided competition for the shares. The Board of Governors' Regulation W, which required repayment of installment loans in 12 months, limited credit union loans. Many commodities for which members normally borrow disappeared from the market. On the other hand, increased wages did lead to a growth in shares outstanding, with the result that loans to members became a less important asset and government securities a larger one. The assets and their percentages to the total are shown in Table 34 for the federally chartered credit unions at the end of 1944.

TABLE 34

ASSETS OF REPORTING FEDERAL
CREDIT UNIONS,
DEC. 31, 1944

Asset	Amount	% of Total
Total assets	\$144,266,156	100.0
Loans to members	34,403,467	23.8
Cash	21,650,950	15.0
U.S. gov't securities	67,849,864	47.0
Savings & loan shares	19,707,836	13.7
Loans to other unions	105,112	.1
Other assets	548,927	.4

Source: FDIC, *Annual Report*, 1944, p. 5.

XX

CONSUMER CREDIT

CONSUMER credit is a field of finance in which there has been rapid development in recent years. Consumer credit includes various types of loans, all of which have in common the fact that they permit consumption to take place earlier than would otherwise be possible. Instead of "saving up" for an expenditure, the consumer buys "on credit" and saves later to pay his debt. Consumer credit thus anticipates consumer income.

Classification of Lenders

To some extent commercial banks have entered the field of consumer credit, but in general specialized lending agencies have developed owing to the differences involved in the making of consumer loans and the making of business loans. Producer credit, with which we generally are concerned in analyzing commercial bank operations, involves many different problems of risk and costs from those of consumer credit.¹ It will be the purpose of this chapter to describe and, within limits, analyze the leading institutions in the field of

¹ It should be observed that the steady growth of government obligations as bank assets has largely destroyed the old concept of commercial banks as principally suppliers of producer credit to the business community.

consumer credit. A broad distinction may be drawn between two general types. There are, first, those which, like banks, obtain funds from depositors or similar creditors and, second, those which obtain funds primarily from investors for the purpose of making consumption loans. The latter are called "cash-loan" agencies. Although there is some overlapping, the first group includes industrial banks, credit unions, and personal-loan departments of commercial banks, while the second includes personal-finance companies, sales-finance companies and other lenders of retail credit, and pawnbrokers, remedial-loan societies, and "illegal lenders." A rough estimate of the number of borrowers patronizing these institutions in 1930 shows: ²

Unlicensed lenders	3,000,000
Pawnbrokers	7,000,000
Personal-finance co's.	2,000,000
Industrial banks	1,000,000
Commercial banks	500,000
Credit unions	200,000
Remedial-loan societies	500,000
Other	150,000

The Problem of Usury

The earliest concepts of loans and credit were concerned with what we now call consumer credit rather than with producer credit. In ancient and biblical times it was doubtless more common for loans of money or goods to be made to the needy for consumption purposes than to producers for business purposes. There soon arose the ethical problem of how far society would go in approving profit to the lender from these transactions. There are many references to early admonitions against taking any or "too much" interest on such loans. In the code of laws of Hammurabi, founder of the Empire of Babylonia about 2250 B. C., it was ruled that . . . "If a man be in debt and sell his wife, son or daughter, or bind them over to service, for three years they shall work in the house of their purchaser or master; in the fourth year they shall be given their freedom." ³ The Bible contains several references to the practice of taking interest; for example,

² Evans Clark, *Financing the Consumer*, New York, Harper & Brothers, 1930, p. 30.

³ Quoted from G. S. Goodspeed, *A History of the Ancient World*, p. 30, by C. O. Hardy (Ed.), *Consumer Credit and Its Uses*, New York, Prentice-Hall, Inc., 1938, p. 5.

"Thou shalt not give him thy money upon usury, nor lend him thy victuals for increase." ⁴ It may be noted that these early prohibitions covered equally the loan of goods and the loan of money that might be spent for goods. They were apparently based upon the belief that the rich were inclined to take unfair advantage of the poor as circumstances permitted.

Later on, probably as a result of the growth of capitalistic production (in the sense of using capital goods), the idea of renting the goods of another became acceptable. Here it was apparent that the user was able to augment his income, while the lender sacrificed the potential increase to his income, and that some payment was fair. In general, however, loans of money for productive as against consumptive uses did not appear in sufficient volume to overcome the ancient prejudice until fairly recent times. While commerce and trade developed in the Roman Empire and during the Middle Ages, there was always a cloud over the collection of interest. Although such collection was general in business transactions, it usually occurred in connection with some subterfuge.

Subterfuge became prevalent after the medieval churchmen had come to general agreement that usury was wicked.

After the twelfth century, there was no ecclesiastical opposition to partnership arrangements in which one partner might furnish capital and do no work, provided he shared losses as well as profits. The investor was also permitted to buy insurance against the loss of his principal and to sell his anticipated but uncertain profit in advance for a fixed sum. Obviously, if the debtor acted as the insurer, the combination of these arrangements into a single contract gave a result that was indistinguishable in effect from a contract for the payment of interest. . . . Another method of effecting long-time loans was the purchase of rents, nominally attached to parcels of land, but actually paid out of profit from the commercial use of funds advanced by the rent buyer.⁵

The Reformation and later the growth of liberalism, as exemplified in the writings of Adam Smith and his followers, contributed to the breakdown of many canons of conduct. The emphasis on "natural law" and *laissez-faire* led to wide-spread acceptance of the notion that interferences with the interest rate were no more defensible than interferences with other prices. At the same time, the notion that the underprivileged stand in need of some sort of protection was persist-

⁴ Lev. 25: 37.

⁵ Hardy, *op. cit.*, p. 8.

ent. The distinction between loans for business purposes, where bargains are struck between businessmen or between businessmen and bankers, and loans to the needy has led eventually to more or less freedom in the business loan market and to legislation covering *small loans*. This statement needs qualification, however, in this way: while it is true that there was a period in England during the nineteenth century when there were no usury laws, they have been common in state laws in this country; however, they have generally provided rates higher than those prevailing on business loans. The convention that 6% is a "fair" rate is very strong, and that rate or 8% is widely set as the legal maximum. Business borrowers usually have been able either to borrow for less or to cooperate with lenders to evade the law, so that such laws generally have not proved to be an effective interference with the market.

Usury Laws and Small Loans

Up to this point the words *usury* and *interest* have been used more or less interchangeably. During the early history of the problem this was justifiable, as a distinction was seldom made. Today, however, usury carries the implication of exploitation; a person who charges usurious rates takes advantage of a necessitous borrower in order to charge "unfair" rates. The usury laws, therefore, have been aimed at the protection of the necessitous borrower. As the laws worked out in practice, however, the protection did not materialize. The reason for this is the generally high cost of the small-loan business, which will be discussed below. Lenders who might have made small loans to consumers did not do so because it was a losing proposition. Thus the field was left open to those who would break the law, since in time of need people will borrow where they can. Some individuals might lend to others on a personal basis with no interest, and others might be willing to make such loans regularly if they could cover their costs, but, in general, the small-loan field until recent years was one of the more lucrative "rackets." ⁶ Interest rates of 100%, 500%, or 1,000% were not uncommon, and collection methods included use of strong-arm tactics, illegal use of local law officials, attachment of wages, and the like.

⁶ Numerous publications of the Russell Sage Foundation describe these conditions. For example, see Robinson and Nugent, *Regulation of the Small Loan Business* (1935).

While the "loan shark" had a very unsavory reputation, what few efforts were made to eliminate his racket until recent years generally consisted of attempts to enforce the usury laws, and thus they were failures, because such attempts merely tended to eliminate all lenders, which was impossible. Usury laws seldom provide any severe penalties and merely permit injured borrowers to sue and collect overcharges. Consequently, unless other crimes could be connected to the loan sharks, enforcement was of no great concern to them.

The Uniform Small-Loan Law

Largely through the efforts of the Russell Sage Foundation after 1910 legislators in many states were educated in the small-loan problem, and a uniform small-loan law, recommended by the Foundation, became the model for similar laws in about half of the states. The main principle of the model law is that, since small loans are expensive to make and service, higher rates for such loans should be legalized, while at the same time "reasonable" limits should be put on charges. The small-loan laws in force represent an attempt to hold as low as possible the interest rates on such loans and still to attract private capital into the legitimate business. Originally, it was believed that a rate of 2% a month on outstanding balances would be sufficient, but experience has shown that a rate closer to 3% appears to be necessary. A common variant is 3% on loans up to \$150 and 2½% on any fraction of a loan in excess of \$150. While 3% a month is 36% a year and at first sounds very high, it has been clearly demonstrated that some such rate is necessary to cover costs with sufficient profit to attract capital, and that borrowers are much better off under such regulation than without it. At first legislators considered such rates to be extortionate, and the reformers were confronted with one of their most difficult tasks in convincing the legislators that the proposed rates were fair to both borrower and lender.

The typical small-loan law provides licenses for lenders who propose to make loans of \$300 or less which will be repaid in installments, and permits them to operate without reference to the usury laws which otherwise remain in force. In this way the license provides the means for enforcing regulation; it can be withdrawn if the allowable charges are breached. Often charges are permitted in addition

to the interest charge; an investigation or filing fee or similar charge is often allowed, but it is limited to some such figure as \$2.00.

Personal-Finance Companies

Passage of small-loan laws usually has been followed in the states concerned by very rapid development of small-loan or personal-finance companies, some of which have attained considerable size.⁷ Some companies with numerous branches have already entered the ranks of "big business." The personal-finance company usually is a corporation, often raising its capital through the investment market. According to Niefeld, sixteen leading personal-finance companies utilized the following sources of funds, the percentages referring to their outstanding loans: ⁸

Common stock	34.6%
Preferred stock	22.4
Surplus	20.0
Notes payable	40.0
Offset—	
Cash balances	10.0

In other words, their funds were 7.0% in excess of their loan balances at the time of this survey (1936). The notes payable represent bank loans and indicate the importance of this indirect way of using bank credit for personal loans.

These funds are used to make loans which are often secured by liens on personal property, but are more often unsecured, at least in practice. A lien on personal property, such as furniture, is usually taken for its effect in insuring repayment, but as likely as not it is not recorded and therefore may not be enforceable. The average loan in most years has been less than \$150. According to students of the field, the repayment record is very good. This record is partly the result of careful lending and the development of credit analysis by the lending companies. The primary factor involved is character, as the security offered often has no ready market or appreciable value. The income of the borrower is almost equally important, but, if collection is forced by unwillingness to pay, expenses mount.

⁷ For a sympathetic description of the prewar development of these companies, see M. R. Niefeld, *Personal Finance Comes of Age*, New York, Harper and Brothers, 1938.

⁸ *Ibid.*, p. 100.

Industrial Banks

Industrial banks are most commonly known to the public as the Morris Plan Banks, although there are several other "plans" of industrial banking in operation. The Morris plan originated in 1910 as a device for specializing in small loans to individuals on the assumption that the potential profit in this field of lending had been overlooked by existing institutions. It was necessary to create some device that legally circumvented the usury laws. The device created was that of discounting the loans at the legal rate but requiring repayment in installments, in the form of purchase of investment certificates. The effective rate was thus approximately double the apparent rate, since the borrower had, on the average, half of his loan. (If repayment is made in regular equal installments, the outstanding balances average half the original loan.) In addition, charges for credit investigation and the like were added. At the present time various states recognize industrial banks by legislation, and although the situation differs from state to state, these banks are in somewhat the same legal position as the personal-finance companies, which also make installment loans.

As the name implies, industrial banks obtain most of their funds from depositors, generally in the form of time deposits. The usable funds are therefore several times the capital employed. The typical loans made by industrial banks have been cosigner loans; the borrower has one or two other people sign his note and these cosigners become responsible for the repayment installments if the borrower defaults. They are usually, therefore, "assistant collectors" for the banks, as they are directly interested in repayment by the borrower. The use of depositors' funds and the less extensive credit investigation necessary for endorsed loans help explain why rates are lower at industrial banks than at personal-finance companies. In recent years industrial banks have branched out in respect to the types of their loans; a large proportion of loans today is secured by liens on automobiles, stocks and bonds, and other personal property. At the same time, the emphasis on "remedial" loans has shifted so that industrial banks lend for a wide variety of purposes. Small merchants and producers borrow from industrial banks when their credit ratings do not permit them to obtain ordinary commercial bank accom-

modation. Thus in some states industrial banks have come very close to being commercial banks concentrating on secured loans. This is particularly true where they are authorized to accept demand deposits subject to check, as in New York State. Loans of \$5,000 are not uncommon in industrial banking.

Personal-Loan Departments

A significant step in the progress of commercial banks into the personal-finance field was taken when the National City Bank of New York created such a department in 1928. The depression experience of a few years later, however, emphasized a trend in this direction. The typical commercial bank during the depression years had excess reserves, unused office space, and employees with extra time. The banks therefore invaded the field of the industrial banks. A strong impetus was given by the Federal government's plan of insuring lenders against losses on installment loans made for home modernization and repair, up to 10% of the volume of such loans.

Like the industrial banks, the commercial banks adopted the practice of requiring installment repayments in order to increase the effective interest rate; in addition, a 2% fee was usually deducted from the face amount of the note. While the industrial bank sells certificates for repayment, the commercial bank often requires the borrower to deposit his repayments in a time deposit; thus the loan is canceled when the deposit is large enough. At first commercial banks generally made cosigner loans, as this type of loan requires less cost for credit analysis, but in more recent years they have taken liens on automobiles and other personal property purchased with the proceeds of loans. In 1936 New York State permitted commercial banks to make installment loans at a gross discount rate of 1% a month; this approximates a rate of 2% a month or 24% a year on unpaid balances.

Many personal loans made by commercial banks are not made by separate personal-finance departments, but in the regular course of business. Regular customers of a bank may find it advantageous to borrow on their secured or unsecured notes in order to purchase expensive durable goods rather than to buy them on the installment plan. Nugent reported that at the end of 1937 personal-loan departments had loans outstanding of \$216,000,000 and commercial banks

without separate departments had loans of nearly \$700,000,000.⁹ Additional interest in personal finance has been shown by the banks since the end of the war. Many banks which have customarily discounted installment paper for dealers and retailers are more and more lending directly to the purchasers.

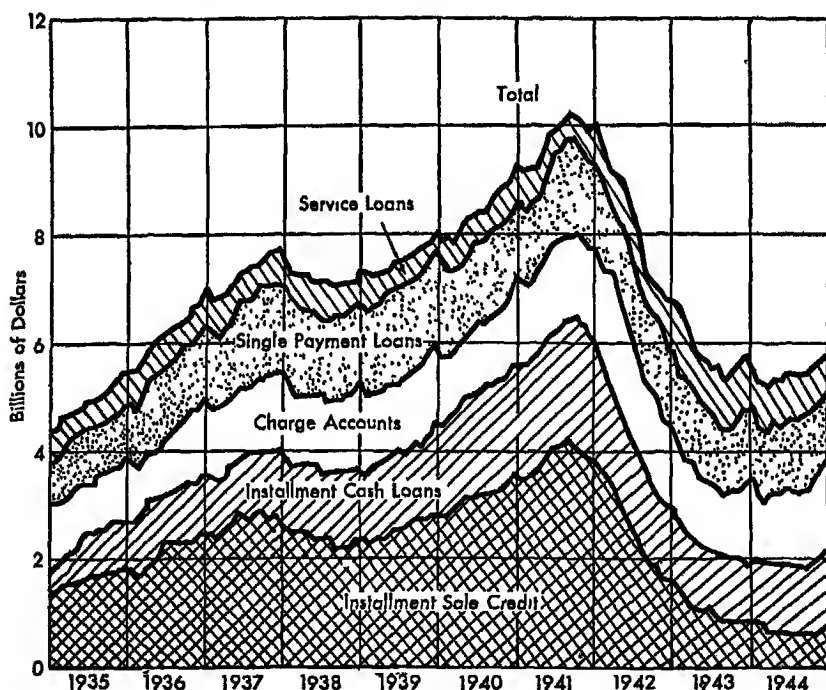


FIG. 24.—Consumer Credit by Principal Types, 1935-1944. (Federal Reserve Bank of New York, *Monthly Review*, March, 1945, p. 19.)

Retail Credit

Retail credit is the credit advanced to customers by retailers and dealers in the form of charge accounts or installment sales. The former usually are paid in the month following the sale, while in the case of installment sales payments may be made over a period of 12, 18, or 24 months. In this field, too, wartime regulations on the amount of down payments and the number of installments greatly re-

⁹ Rolf Nugent, *Consumer Credit and Economic Stability*, Russell Sage Foundation, 1939, p. 115.

stricted lending, while at the same time larger consumer incomes put on a cash basis many sales that normally would have involved credit.

Installment sales have become a characteristic of American retailing since World War I, largely in connection with the mass production and distribution of consumer durables like automobiles, refrigerators, washing machines, and the like. The practice is an old one, however, as illustrated by the old-time book salesman who went about the country selling his "sets" for "so much a month." Singer sewing machines have been sold on the installment plan for many years, and, outside the consumer field, agricultural and railroad equipment has often been sold in this way.

The volume of installment sales and open charge accounts can be read from Figure 24, above. Before the war installment credit was the most important type of consumer credit, accounting for 50% to 60% of the total.¹⁰ The volume of installment loans fell rapidly during the war years, owing to the shortage of goods usually financed in this manner and the greater incomes of consumers. Installment credit approximated six billion dollars in 1941, including installment sales and installment loans together, and two billion in 1943, but the relaxation of building restrictions and the return of some civilian goods permitted an increase of about half a billion by the end of 1945.¹¹

According to Census Bureau estimates, in 1935 cash sales were 67.8% of all retail sales; open-account sales, 21.3%; and installment sales, 10.9%; while in 1945 the respective percentages were 78, 19 and 3.¹² During the interval between 1939 and 1945, annual retail sales increased from 42 billion dollars to 74.6 billion. Charge accounts were therefore larger in 1945 than in 1939, although the percentage to total sales was less. Installment sales, for reasons just mentioned, dropped from 4.9 billion dollars to 2.3 billion.

If retailers permit their customers to purchase goods on credit, they must obtain the funds for financing their businesses in the meantime from some other source. Some retailers simply may have more of their own funds employed, others may rely more heavily on banks, and others may sell their customers' installment paper to finance companies; again, the retailer or dealer simply may arrange for his cus-

¹⁰ F.R.B. of N.Y., *Monthly Review*, March, 1945, p. 18.

¹¹ *Ibid.*, p. 19.

¹² *Federal Reserve Bulletin*, June, 1946, p. 581.

tomer to make a loan from a finance company. Practice differs in different types of retailing. In 1945, for example, department stores and furniture stores sold only 1% of their installment paper, but automobile dealers sold 44% of theirs to finance companies.¹⁸

Sales-Finance Companies

Sales-finance companies have developed to meet the needs of retailers and dealers who extend credit to their customers. The largest type of operation is the retail sale of automobiles, but many types of retailers turn their installment paper over to finance companies or arrange that the financing of their sales shall be a matter between the customer and finance company. In the automobile field, the dealer usually sends an application filled out by the prospective customer to an office of a finance company. If the company approves the transaction, a conditional sale is made whereby the title to the car remains with the finance company until the car is fully paid for. The purchaser makes his payments directly to the finance company. In case of default, the finance company *repossesses* the car, after which it is usually resold through the same dealer. Generally, the finance company has *recourse* against the dealer for any losses from defaults, but this is not always true.

The obvious principles involved in the business of a finance company are that the down payment should be sufficient to give the purchaser a strong interest in obtaining title to the commodity, and that the market value of the commodity should exceed the amount still due. The payments therefore must be arranged so that they liquidate the debt at least as rapidly as the commodity depreciates. Before the war finance companies generally insisted on a down payment of one-third of the price of an automobile or other commodity, with monthly payments running up to 18 months. Considerable competition developed in the field, however, and was expressed in lower down payments and longer terms.

Owing to the sale agreement employed by the finance companies, their extensions of credit are not classed legally as loans and hence they are not subject to the usury laws. Nor are they, as business corporations, subject to the small-loan laws. In five states, however, they

¹⁸ *Federal Reserve Bulletin*, June, 1946, p. 584.

have been brought under special legislation and supervision by the banking authorities, beginning with Indiana in 1935.¹⁴

Finance companies vary in size from the giant affiliates of automobile companies to small local firms. The "Big Four" firms generally did about 75% of the total finance-company business before the war.¹⁵ Estimates of the amount of installment sales financed through finance companies are generally in the neighborhood of 70% of the total—before the war, about \$3,500,000,000 out of \$5,000,000,000 per year.

The business of finance companies is not restricted to financing installment sales. Some companies make advances to dealers or to producers, secured by trade receivables. As was pointed out in the chapter on bank loans, this is a type of lending for which commercial banks are not suited. The charges of the finance companies are in line with those of industrial banks for the same types of loans.

The sales-finance companies are like the personal-finance companies in respect to their sources of funds. Like the latter, they are business corporations, and the larger ones raise capital funds through the securities markets. In addition, they borrow from commercial banks. In this way the commercial banks do not incur the costs of credit analysis involved in making relatively small loans secured by accounts receivable, but their funds are channeled to the same borrowers through the finance companies. One device employed by the large finance company to obtain bank funds is the sale to commercial banks of debentures secured by installment paper or other receivables held by a trustee (with provision for substituting similar paper as the original matures).

Other Lenders

Other lenders operating in the field of consumer credit are credit unions, remedial loan societies, pawnbrokers, and unlicensed lenders. Credit unions, owing to their characteristics as savings institutions, have been described in the preceding chapter. Their classification with savings institutions, however, is purely arbitrary, for the nature

¹⁴ J. W. Slater, "State Laws Governing Installment Selling," *Time Sales Financing*, June, 1946, p. 7.

¹⁵ The "Big Four Companies" were General Motors Acceptance Corporation, Commercial Credit Company, Commercial Investment Trust, and Universal Credit Corporation. Universal Credit Corporation and Commercial Investment Trust are now merged.

of their loans is such as to merit their inclusion with other consumer-credit agencies. It should be noted that some other agencies described in this chapter also could have been included in the preceding chapter; industrial banks, especially in those states where their deposits are solely time deposits, are an example.

Credit Unions

Credit unions established under Federal law have as reasons for their existence the encouragement of thrift and also to be "a source of credit for provident or productive purposes." The declining use of credit unions for consumer loans is indicated in the declining percentage of loans to total assets. At the end of 1937, loans to members were 82% of total assets, but by the end of 1941 they were 66% and at the end of 1944, only 24%. New members are often borrowers but, as they repay their debts and retain membership, the new crop of members each year constitutes a smaller proportion of total membership. Thus, it is argued that this trend to a decline in the proportion of loans to investments would have taken place even if wartime conditions had not been present, although perhaps not so rapidly.¹⁶

Pawnbrokers

Little reliable information is available concerning the operations of these lenders. A pawnbroker either makes a loan secured by pledge of personal property or buys the property with a return sale agreement. The loan or price is normally between 50% and 75% of appraised value, and the property is preferably jewelry or other property of high value in small bulk. A surprisingly large proportion of these loans are for business purposes; Prather estimates the proportion at one-fourth of the total.¹⁷ The lack of reliable information is indicated by Prather's estimate that 85% of the loans are repaid and, in contrast, by Hardy's statement that 75% of the pledges are not redeemed.¹⁸ A considerable proportion of the funds used by pawnbrokers are obtained from banks. Hardy estimates the annual volume of loans at only \$150,000,000 or so, although other estimates are in the neighborhood of \$600,000,000.¹⁹

¹⁶ FDIC, *Annual Report on Credit Unions*, 1944, p. 6.

¹⁷ C. L. Prather, *Money and Banking*, Chicago, Richard D. Irwin, Inc., 1940, p. 664.

¹⁸ *Ibid.*, p. 664, and C. O. Hardy (Ed.), *op. cit.*, p. 71.

¹⁹ Hardy, *op. cit.*, p. 71; Evans Clark, *Financing the Consumer*, p. 41. The latter esti-

There is wide variation in the legal regulation of pawnbrokers, ranging upward from none at all. Where regulation of the charges exists, 3% a month is typical, plus charges for foreclosure if the pledge is not redeemed. Most pawnshops are operated in conjunction with retail outlets for the unredeemed pledges. When a pledged article is sold at auction for more than the amount of the loan and charges, the excess is supposedly kept for the borrower. The pawnbroker himself usually bids in an article for sale through the retail outlet, so there is seldom a surplus. If there were, the borrower would seldom claim it. As a result, the main profit of the pawnbroker comes from the merchandising part of his business.

In Europe pawnshops have a long history as remedial loan institutions. They were fostered as early as 1450 by Franciscan Orders and operated by municipalities in Italy and France, where they were known as *Montes Pietates* and *Monts de Piété*. In recent years the largest pawnshops have been municipal ones. In this country, of course, the history of pawnshops has been considerably different.

Remedial Loan Societies

The Russell Sage Foundation and other philanthropic associations fostered establishment of remedial loan societies in their early fight on loan sharks. These societies, of which the Provident Loan Society of New York is the largest, may be described as benevolent pawnshops. With the growth of personal-finance companies and other lenders in the field, the need for remedial loan societies has diminished, and few still exist. Most have been liquidated and the capital returned to the contributors.

Unlicensed Lenders

It may be said that borrowers borrow either because they have to or because they choose to. In case of emergency such as illness, accident, or death, the borrower may have little choice. In deciding whether to purchase a new refrigerator, there is a choice whether to save and buy, or buy and pay installments, although under modern standards of classifying things as necessities or luxuries the choice may not be particularly free. At any rate, it is the first type of neces-

mate is 7,000,000 borrowers with an average loan of \$30. Hardy puts the average at around \$5.

sitous borrower who so often runs afoul of the loan shark and whose plight leads to agitation for legislation making possible some of the lending organizations described in this chapter.

An unlicensed lender may not necessarily be a loan shark but, as has been pointed out, if he is a professional lender he cannot lend at rates set by usury laws. If he refrains from becoming a licensed lender (where state laws covering small loans exist) he thus becomes a law-breaker and is apt to charge all the traffic will bear. Campaigns have unearthed chains of loan-shark offices operating in several states. Wage earners are the usual victims, sometimes through the device of "selling" their wages. There are many examples of lenders buying wages of from \$5.00 to \$20.00 for a dollar charge. That is, the borrower promises to pay, say, \$11 from his next pay in exchange for \$10 a week earlier. Often a borrower as necessitous as this cannot afford to pay the \$11, so the transaction is repeated week after week. Many devices have been employed to avoid prosecution but the strongest weapons of the illegal lender are the ignorance and need of the borrower. Experience has widely demonstrated that the existence of a workable small-loan law is the most effective means of combating the loan shark.

Costs and Rates

The high costs of making and servicing small consumer loans and the high rates charged for this credit have been referred to above. A further discussion of these problems will conclude this chapter.

Costs

The costs of consumer loans may be considered as costs of funds, unit costs of making loans, unit collection costs, and overhead costs. In comparing consumer-loan agencies to commercial banks, an important point of difference lies in the sources of the respective funds. Commercial banks receive deposits, time and demand, that permit them to carry a volume of loans and investments several times the amount of invested capital. In the chapter on bank earnings it was explained that a low return on loans and investments is multiplied into a considerably higher rate of return on the stockholders' equity. Industrial banks, it is true, also receive deposits, but in those states

where they have only time deposits they do not have the advantage of demand deposits which draw no interest. The personal-loan departments of commercial banks, of course, have deposits as a source of funds like any other lending departments of such banks. Most other consumer-loan makers do not have the advantage of deposit expansion, and their loans bear a much closer relationship to invested capital. Personal-finance and sales-finance companies obtain additional funds from banks, but of course at an interest cost. If consumer loans are to be made by "legitimate" concerns, the loans must carry a sufficient rate of return to attract funds for investment in this type of loan.

The unit-cost problem is merely a reflection of the size of consumer loans. Before the war personal-finance company loans averaged about \$150, while the loans of personal-loan departments of banks averaged about \$250. This higher average was of considerable advantage to commercial banks because it made the average cost per loan much less. A comparison with the business loans and discounts of the commercial bank would show a much greater differential. Many costs are more or less the same regardless of the size of the loan; the bookkeeping cost of entering a loan for \$10,000 is no more than that of entering one for \$100, but it takes a hundred of the smaller loans to equal the larger in loan volume. (Since the typical consumer loan is repaid in installments and thus on the average one-half the loan is outstanding, it may be said that 200 loans are required to maintain the loan volume.) The credit investigation—the interview, telephone calls, and routine checks—costs the same whether an applicant wants \$100 or \$200. Thus the fact that consumer loans are small explains in large part their high costs, and those institutions with the smaller average loans have the higher costs. Most estimates of the cost of making and carrying a small loan approximate \$20.00.²⁰ Thus, even before any interest or "profit," there is a cost of about 13% for a \$150 loan and 8% for a \$250 loan.

Collection costs similarly are high per loan. The installment nature of most consumer loans makes them more expensive to collect because of the much greater amount of bookkeeping.

²⁰ O. Lorenz estimates the cost of making and collecting a 12-installment auto loan at \$25.42. "Cost of Handling Instalment Credit," *Time Sales Financing*, April, 1946, p. 11.

A personal-finance company has about 140 times as many original bookkeeping entries as a commercial bank for the same volume of lending. . . . They must employ eight persons to handle the same dollar volume of loans as one employee in a small-town bank; or 50 to 60 persons to handle the same dollar volume of loans as one clerk in the large city bank.²¹

Bad-debt losses are low largely because of aggressive collection methods. Delinquencies, which are not uncommon, build up the cost of final collection through letters, calls, and the like. There are also costs involved in foreclosing or repossessing property on which there are claims.

In connection with overhead costs two items, not present in ordinary commercial banking operations, are often mentioned. One is the cost of learning how the business of consumer credit should be carried on. It is pointed out that credit unions, industrial banks, and personal finance companies all date only from about 1910, and separate personal-loan departments of commercial banks from 1928. The excellent record of collections and selection of risks now attained by small-loan lenders is the result of experience and research, as is shown by a comparison with the losses usually suffered by philanthropic amateur lenders. Another is the cost of regulation. It would be difficult to say definitely without adequate statistics whether this cost of reports, examinations, and the like runs higher for consumer-credit lenders or commercial banks, but it is probably true that this cost is higher per loan for the former.

Rates

Rates charged for consumer loans are quoted in many different ways, some misleading, and they also vary considerably between types of lenders. This variation is caused by differences in the size of loans, costs of funds, and selection of risks. The personal-loan departments are generally able to quote the lowest rates, but industrial banks attempt to meet them on common ground. The actual effective rate also may be calculated in many different ways.²² The effective rate depends to a large extent upon the manner of repayment. Many consumer loans involve a discount and periodic repayment, both of which make the effective rate higher than the quoted rate. If a bor-

²¹ Hardy, *op. cit.*, p. 105.

²² See M. V. Ayres, *Instalment Mathematics Handbook*, Ronald Press Co., 1946.

rower discounts his \$100 loan at 6% and pays back the loan in twelve equal installments of \$8.33 each, he actually pays a total of \$6.00 for the use of \$94.00 for the first month, \$85.67 for the second month, \$77.34 for the third month, and so on. As \$47.00 (half of \$94.00) is approximately the average amount at his disposal, the \$6.00 discount represents an annual interest cost of about 12.7%. If the borrower is allowed a low rate of interest on his repayment deposits, the rate will be reduced.

In the case of a small loan figured on the outstanding balance method, there are numerous methods of calculating the effective rate. While the following is not a precise method, it suffices to illustrate the nature of the rates. Suppose a \$100 loan is to be repaid in ten installments and that a rate of 3% is to be charged on outstanding balances. The charge will be \$3.00 for the first month, in addition to the \$10.00 repayment; the next month it will be \$2.70, and so on. In this illustration the total of the monthly charges will amount to \$16.50. If \$50.00 is taken as the average amount available over the ten months, the effective rate of \$16.50 for the use of \$50.00 is about 39%, on an annual basis. The 3% per month "figured straight" is, of course, 36% per year.

TABLE 35

REPAYMENT TABLE FOR SMALL LOANS,
2% ON UNPAID BALANCES

Amount Borrower Gets	Monthly Payments:		Interest and Principal	
	6 mo.	12 mo.	15 mo.	18 mo.
\$ 50	\$ 8.93	\$	\$	\$
75	13.40	7.10	5.85	5.01
100	17.87	9.47	7.80	6.69
150	23.20	14.21	11.70	10.03
200	35.74	18.94	15.60	13.37
300	53.61	28.41	23.39	20.06

In practice, most loans and repayments are calculated so that an equal payment is made each time to cover principal and interest on the remaining balance. One of the large chain personal-finance companies advertises the loans and repayments shown in Table 35, which is based on a 2% monthly rate on unpaid balances. It may be noticed that charges are generally proportional to the size of the loan, the

\$150 loan for six months being an exception, possibly because of local competitive conditions.

The borrower at this institution, for example, would pay \$113.64 during a twelve-month period on a loan of \$100. While this would represent a rate of about 27% on the average amount at his disposal, many borrowers might consider the charge reasonable in view of the fact it makes possible a \$100 purchase a year earlier. This would be particularly true if the price were expected to rise during the year while the \$100 was being saved. Generally, however, borrowers probably are uninformed as to what "time sales" and installment loans cost them in interest.

XXI

URBAN MORTGAGE AND AGRICULTURAL FINANCE

THE BUSINESS of borrowing and lending funds on the security of real-estate mortgages is another branch of finance in which commercial banks participate but in which specialized institutions predominate. Government agencies have become especially important in this field. This chapter includes descriptions of the special characteristics of mortgage credit, urban and rural, and of the lending institutions and government agencies of most importance.

Urban Mortgage Lending

The acquisition of homes is ordinarily accompanied by borrowing because for most people a home represents a very large purchase. The purchase of a home is the largest single investment made by most home owners. Without borrowed funds most people would find it impossible to buy or build a home. On the other hand, the home owner is free of the necessity of paying rent, and, other things being equal, the funds that would otherwise be paid to a landlord can be devoted to interest and principal payments on a loan. This is the basic

justification for borrowing funds for home building or purchase.¹ In the case of houses built for sale, the builder ordinarily needs financing in much the same manner as any other businessman, and in the case of houses and apartments built for rent, the owner also requires financing as in any other business. The difficulty of financing home ownership is indicated by the fact that prior to 1945 the proportion of owner-occupied nonfarm homes was never as high as 50%; more than half of the occupants did not own their homes. As a result of a combination of circumstances—higher incomes, price control over rents but not over the selling prices of houses, and the housing shortage—many people found it desirable or necessary to purchase homes during the war, and the proportion of owner-occupied homes rose from 41% in 1940 to 51% in 1945.² Many properties were purchased from lending institutions that held foreclosed property. Such holdings declined from \$2,250,000,000 in 1939 to \$255,000,000 at the end of 1944.³

Urban mortgage finance deals with the business of making loans secured by mortgages on urban real estate. Usually the proceeds of such loans are used for construction or acquisition of the property serving as security. A central problem in real-estate finance thus becomes that of the adequacy of real estate as security. Prior to the depression beginning in 1929, professional lenders had little experience to indicate that mortgages might not be excellent security for loans. In contrast to the earlier experience, the decade of the 1930's showed that mortgage loans, at least as then made, could be very unsatisfactory.

Predepression Urban Loans

The faults of predepression loans had been recognized by leading lenders and students, but they were considered somewhat academic owing to the lack of actual unfavorable experience. During the post-1929 difficulties much more serious study and analysis were given to

¹ There are many reasons cited for and against home ownership. Many of them are not strictly economic. In the United States home ownership has a strong appeal for many people, although it is clear that in many circumstances it is more economical for housing to be provided as rented property.

² *Federal Home Loan Bank Review*, June, 1946, p. 261. Percentages for other years are: 1900, 37%; 1920, 41%; 1930, 46%.

³ *FHLB Review Statistical Supplement*, April, 1946, p. 7. Does not include holdings of "individuals and others."

mortgage-lending problems. The principal characteristics of the predepression loan that fell into disrepute were the short maturities and the ratios of loan to appraised value. Prior to 1930 it was customary to lend in the neighborhood of 50% of the appraised value of a property, although higher percentages were sometimes used. The trend of the ratio was upward during the 1920's, and, as has been mentioned before, the savings banks were permitted to lend 66.6%. This procedure would seem to leave a margin of safety amounting to one-third of the value of the property. This would be true, however, only if the appraisal were correct. Appraising real estate is a difficult science, nowhere near as exact prior to 1930 as scientific methods have since made it. Interbank competition often led to competitive appraisals in order to allow larger loans. The building boom of the 1920's contributed to this trend through the higher costs of building. As has often been illustrated, the cost of a building and its value are not the same thing. Values of real property are subject to severe fluctuation in periods of changing economic conditions, with the result that a loan based on a 60% appraisal may, a few years later, represent 100% of current actual value.

Most predepression loans matured in three or five years, with a presumption that they would be renewed rather than paid off at the end of that time. As it happened, a very large part of the total mortgage loans therefore fell due during the depression years. The difficulties of the banks and the search for liquidity made lenders unwilling to renew, while under the depression conditions borrowers were unable to pay. This situation led to many state moratorium laws, which provided that foreclosures could not be made for reason of default of principal as long as the interest payments were kept current.

Most home owners and other real-estate owners had found it necessary to acquire funds in addition to those provided by the first mortgage. Second mortgages were common, and greatly added to the costs of acquiring real estate because of the higher charges for these loans, which carried junior liens on the property. The typical home-financing methods were an expensive burden at almost any time, but under the depression conditions of unemployment and reduced incomes they became impossible for a great many people.

The quality of real estate as security for a loan depends upon a great many factors which it is not practicable here to analyze in de-

tail. It may be said that in the case of homes the lender is particularly interested in the income of the home owner. The property itself is not income-producing except in the sense that it saves rent; this saving can be devoted to retiring the debt and paying interest. The lender should expect the loan to be serviced, and should find it unnecessary to take possession of the property. Where the latter is imperative, many costs may be incurred, such as legal fees, rehabilitation of the property, selling costs, and the like, which are apt to use up even a conservative margin of safety, especially if real-estate prices are depressed. As a rule, the more expensive the home, the more likely is foreclosure and the greater is the risk of depreciation of value. One-family homes usually make better risks than two-family houses or apartments. In the case of income-producing property, the lender must analyze the likelihood that the income will continue to be produced, a matter which leads to many considerations. As in the case of home loans the lender must be cognizant of trends of population growth and migration, as well as of competition in the business in which the real estate is used, and other factors affecting the specific piece of property, as well as the factor of general business conditions.⁴ As an extreme example, loans on vacant land are at the bottom of the list of risks and are illegal for savings-bank investment.

Mortgage Loans and Securities

Although the usual mortgage loan is a loan made directly by a lender to a borrower, larger loans may be made through mortgage bankers or brokers. Mortgage brokers find lenders for borrowers and borrowers for lenders; they may also make loans that they expect to sell to investors. Mortgage bankers, especially before 1930, performed functions in their field similar to those of investment bankers. They underwrote and distributed mortgage loans. Sometimes this process involved the issuance of mortgage bonds, whereby a lien on an office building, for example, would be put in trust as security for an issue of bonds to be sold to investors. The bonds would normally amount to 50% of the appraised value of the property, but the appraisal would be based largely on the anticipated revenues of the building. The funds obtained from the bond sales might therefore

⁴ A discussion of the experience of savings banks with their mortgages on various types of property appears in W. Welting, *Savings Banking in New York State*, Ch. VI.

provide well over half of the cost of the building, the remainder being provided by the promoters or obtained for preferred and common stock. In other cases the mortgage bankers might put in trust several mortgages as security for certificates sold to investors. The certificates represented participation in the mortgages, whereas the real-estate bond was an obligation of the issuing corporation. In both cases the characteristics of mortgage loans during the 1920's, just discussed, led to the downfall of many securities, although prior to 1930 real-estate bonds ranked high on investment lists.

Another development that came to an end as a result of the depression, at least temporarily, was the guaranteed mortgage. Mortgage bankers found it profitable to guarantee the mortgages they sold, keeping a premium of $\frac{1}{2}\%$ from the payments made by the borrower. These premiums were to be used to build up reserve funds to protect the holders of mortgages from loss. Defaults were so widespread after 1930, however, that the guarantee companies were overwhelmed; those in New York City still owed in the neighborhood of \$2,000,000,000 when they were unable to pay more. Their affairs were put in the hands of the Superintendent of Insurance for liquidation and the business was outlawed.⁵

The Postdepression Loan

The faults of mortgage loans as made before 1930 and the standards applied by the various government agencies operating in the home-loan field since that time have led to the general adoption of a long-term, single, amortized loan. Impetus was given to this trend by the insurance of such loans by the Federal Housing Administration. The advantages of such a loan are that the second mortgage is eliminated, since it appears safe to lend a higher proportion of the value of property than was the case under the "old-line" loan. Consequently the cost of funds to the borrower is reduced. The amortization principle offsets the originally high proportion lent, since the principal of the loan is continually reduced, presumably at least as fast as the property depreciates. This added safety also reduces the risk of lend-

⁵ See E. A. Lodge, *A Mortgage Analysis*, New York, Home Title Guaranty Co., 1935. This book analyzes the experience of a guarantee company that had been in business many years. Also see *Annual Reports* of the Superintendent of Insurance, New York State.

ing and tends to lower interest rates charged. Finally, the payments of interest and principal are so scheduled that they approximate rent, so that payment of the debt is presumed to be no more difficult than payment of rent. In some cases public utility charges and installments on the annual property tax are included in the monthly payments as well.

It may be noted that amortization of debt was not a new principal in the 1930's, as it had been applied to various debts for many years. Serial bonds, for example, are common in the field of corporation and government finance. The general application of the principle to mortgage loans, however, was new.

As in all types of installment loans, the nominal interest rate is not necessarily the effective rate; the payment of interest periodically raises the effective rate, and the effect of the declining principal must also be calculated. In the case of mortgage loans it is also debatable whether certain other charges usually associated with amortized loans should be included in calculating effective rates.⁶ These charges include fees for searching titles, registering papers, insurance of the property, insurance of the mortgage, and the like. Schedules of repayments are based upon annuity tables, which are calculated to show the amounts necessary to retire certain debts over stated periods. For example, \$6.60 per month retires a \$1,000 debt in 240 months with interest at $\frac{1}{2}$ of 1% a month; the nominal rate is thus 5%. Table 36 shows the amounts necessary to cover interest and retirement of principal in twenty years at various rates; tables similarly constructed would show the amounts required for other periods of time. From this table it is apparent that payments required to finance a home mortgaged for \$5,000 at 5% amount to \$33.00 per month for twenty years, or a total of \$7,920. The old-line loan, without periodic reduction, required interest payments of \$250 a year for 20 years—\$5,000 in all, with the debtor still owing \$5,000 of principal. In the case of an amortized loan during the first part of the period a large portion of each monthly payment is claimed for interest but with each succeeding month the principal becomes smaller so that less is required for interest. Thus a larger and larger amount becomes available each month for the reduction of principal; in fact the last pay-

⁶ R. S. Smith, "A Method of Comparing Home-Mortgage Financing Costs," *Journal of Marketing*, April, 1945, p. 387.

ment is used almost entirely to retire the principal for there is very little remaining interest to pay.

TABLE 36

MONTHLY INSTALLMENTS REQUIRED TO
RETIRE \$1,000 IN 20 YEARS

Nominal Rate	Monthly Installment
4½%	\$6.33
5	6.60
5½	6.88
6	7.17

Home-Mortgage Lenders

The relative importance of various lenders in the home-loan field is shown in Table 37. It is apparent that individual lenders are

TABLE 37

ESTIMATED BALANCE OF OUTSTANDING MORTGAGE
LOANS ON NONFARM 1- TO 4-FAMILY DWELLINGS,
1930, 1936, 1942
(millions of dollars)

Mortgagee	1930	1936	1942
Savings and loan associations	6,402	3,237	4,565
Insurance companies	1,732	1,245	2,255
Mutual savings banks	3,300	2,750	2,700
Commercial banks	2,425	1,230	2,480
Home Owners' Loan Corp. ....	....	2,763	1,567
Individuals and others	7,400	6,000	6,350
Total	21,259	17,225	19,917

Source: Federal Home Loan Bank Administration, *Annual Report*, 1943, p. 38.

an important source of mortgage credit. In many localities individuals with knowledge of real estate provide a large part of the funds for local home construction. Such individuals provided about half of the loans classified under "individuals and others" in this table. These figures, on a nation-wide basis, do not reveal the relative importance of lenders in different areas. The mutual savings banks, for example, are more important lenders in New York and

New England than is indicated in the table. A clue to the possible post-war importance of these lenders may be inferred from these figures for new loans made during the first four months of 1946 (in millions of dollars): ⁷ These loans, in the first postwar year, were greatly in excess of the rate of lending during the war years.

Savings and loan associations	1,031	35.5%
Insurance companies	118	4.0
Mutual savings banks	128	4.4
Com'l banks and trust co's	674	23.2
Individuals	635	21.9
Others	319	11.0
	<u>2,906</u>	<u>100.0%</u>

Government Home-Loan Agencies

Any discussion of the source of mortgage funds is very incomplete without inclusion of the government's role as a lender of funds and guarantor of loans made by others. Prior to the reorganization of many government agencies in 1942 it was a complicated task merely to arrange the agencies concerned with housing and enumerate their functions; since 1942 a much more orderly presentation is possible. Nevertheless, reference to Figure 25 will be helpful to place in mind the names of the different organizations and their relationships to each other. This chart includes housing agencies not directly active in the mortgage financing of homes, but they have been included for completeness although they will not require discussion here.

National Housing Agency

The National Housing Agency is the over-all supervisory agency that coordinates the other organizations shown on the chart. Various housing functions—construction, lending, insuring of mortgages, and the like—had become scattered throughout independent agencies and in old-line departments under various Acts of Congress, a situation which required the reorganization referred to above. The principal interest here is in the Federal Home Loan Bank System, and to a lesser extent, the Federal Housing Administration.

⁷ *FHLB Review*, June, 1946, p. 269.

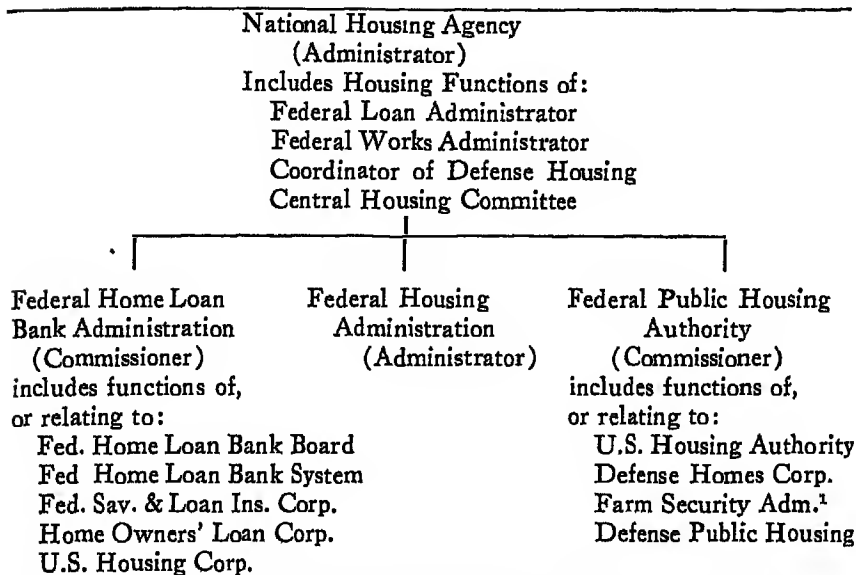


FIG. 25.—Organization of Principal Housing Functions of the Federal Government.
(National Housing Agency, *Annual Report*, 1944, p. 69.)

¹ Nonfarm public housing functions.

Federal Home Loan Bank System

The Federal Home Loan Bank System may be compared for illustration to the Federal Reserve System; it consists of twelve Federal Home Loan Banks and the member institutions, mainly savings and loan associations, which were described in Chapter XIX. Prior to the reorganization there was a Federal Home Loan Bank Board, similar to the Federal Reserve Board, which has been replaced by a single commissioner. The system now includes the Federal Home Loan Banks, the Federal Savings and Loan Associations and other members, the Federal Savings and Loan Insurance Corporation, the Home Owners' Loan Corporation, and the United States Housing Corporation.

The Federal Home Loan Banks were established in accordance with legislation in 1932 in order to provide credit facilities to assist mortgage lenders. The Treasury (later the RFC) was authorized to subscribe to \$125,000,000 of capital stock, with additional funds

to become available from three principal sources: sale of additional stock to member institutions, deposits of the member institutions at the Home Loan Banks, and sale of debentures to the investing public.⁸ The Home Loan Banks were thus to provide for the first time a source of central-bank credit for institutions specializing in mortgage loans.⁹ The need for such an institution was clearly illustrated by the lack of liquidity of such lending agencies at a time when withdrawals of deposits were widespread. It was hoped that the existence of the Federal Home Loan Banks would enable lending institutions to place new loans as a recovery measure, since they could make emergency calls for cash on the banks, but this hope was not realized during the first few years of their existence. Furthermore the hope that all types of mortgage-lending agencies would become members of the system has not materialized, for membership is confined almost exclusively to savings and loan associations (including state-chartered associations). Membership of different types of lenders in the system is tabulated below. Of the 3,697 members on December 31, 1945, only 39 were not savings and loan associations.

TABLE 38

MEMBERSHIP IN THE FEDERAL HOME
LOAN BANK SYSTEM,
1935-1945

(dollar amounts in millions)

End of	All Members		Savings and Loan Associations (State & Federal)		Mutual Savings Banks		Insurance Companies	
	No.	Assets	No.	Assets	No.	Assets	No.	Assets
1935	3,467	\$3,059	3,455	\$2,890	9	\$152	3	\$ 16
1940	3,864	5,037	3,824	4,417	11	214	29	405
1945	3,697	8,641	3,658	7,663	25	591	14	385

Source: *Federal Home Loan Bank Review Statistical Supplement*, April, 1946, p. 25.

The mutual savings banks have remained outside the system for the same reasons that they showed their independence of the FDIC

⁸ At the end of 1945 the Treasury held \$124,741,000 of stock, members held \$73,651,000 of stock and \$53,525,000 of deposits, and debentures outstanding were \$68,500,000. There was also surplus of \$21,049,000. (*FHLB Review Statistical Supplement*, April, 1946, p. 23.)

⁹ The Banking Act of 1935 made possible advances to member banks of the Federal Reserve System on the security of mortgage loans under Section 10B.

for several years; they considered it more practicable and desirable to establish their own systems of self-help in the states where savings banks are numerous. Commercial banks would find little to gain by membership, since the Federal Reserve Banks offer the same advances secured by mortgages. The insurance companies, generally, do not have the same problem of liquidity as banks since they are not subjected to the withdrawal of deposits. They have similar problems, such as requests for loans on policies and cash surrender values, but not to the same extent as banks.

Savings and Loan Associations

These associations have been described as savings institutions and require no detailed description here, except that additional comments on their mortgage-lending activities and their participation in government assistance are now appropriate. In order to provide sources of mortgage money in the 3,000 counties where other institutions were considered inadequate during the depression, new Federal Savings and Loan Associations could be chartered. The Treasury and the Home Owners' Loan Corporation (described below) were authorized to purchase shares in these and existing state-chartered associations. The purpose was to provide additional funds to stimulate building. These investments had been largely refunded by the end of the recent war, and in the meantime the government received the same return on the shares as did private investors.

The loans made by the savings and loan associations conform to legal standards concerning amortization, security, and the interest rate. They are often insured against loss, as described subsequently in connection with the Federal Housing Administration. Furthermore, the shares held by investors are insured up to \$5,000. As pointed out before, the federally chartered institutions must carry insurance of shares, while the state-chartered members may. At the end of 1945, 1,004 of the latter were insured and 1,187 were not, but the insured associations were larger.

The savings and loan associations do not ordinarily remain long in debt to the Federal Home Loan Banks, any more than member banks of the Federal Reserve System remain in debt to the reserve banks. Where a savings and loan association has required funds in addition to private investment in its shares in order to meet the

demand for home loans, it has been encouraged to sell shares to the Treasury or HOLC rather than to borrow continuously from its Home Loan Bank. The volume of advances made by the Home Loan Banks and the volume of repayments are shown in Table 39. The volume of advances outstanding at the end of 1945 was only \$194,873,000.

TABLE 39
FEDERAL HOME LOAN BANK ADVANCES
AND REPAYMENTS,
1937-1945
(millions of dollars)

Year	Advances	Repayments
1937	123	68
1938	81	83
1939	94	112
1940	134	114
1941	157	139
1942	99	189
1943	156	176
1944	239	218
1945	277	213

Source: *Federal Home Loan Bank Review Statistical Supplement*, April, 1946, p. 23.

Home Owners' Loan Corporation

The Home Loan Banks were designed primarily to assist their member institutions; only indirectly would this assistance benefit the mortgagor. Lending institutions might be able to allow more leniency in cases of delinquency, but the establishment of the banks did little to solve the problem of the home owner who was about to lose his property through foreclosure. Many people were misled into thinking that the Home Loan Banks could help them directly, and applied to the banks for loans with which to service mortgages. The result of this public pressure, as well as of political and social unrest generated by the problem, led to the establishment in 1933 of the Home Owners' Loan Corporation. This was purely an emergency institution, designed to save homes from foreclosure. The HOLC was authorized to exchange its own bonds, which the government guar-

anteed, for mortgage loans. The HOLC appraised the mortgaged property and, if it saw fit, offered up to 80% of the appraisal to the mortgagee in exchange for the mortgage. Even where the value of the bonds was less than the face amount of the mortgage, this procedure was often advantageous for the mortgagee, since it gave him high-grade bonds and eliminated the necessity of foreclosure in order to obtain his funds. The HOLC then revamped the mortgage, putting it on an amortized basis, generally at reduced interest, and, if necessary, advanced additional funds for the rehabilitation of the dwelling.

The HOLC thus took over the "worst" loans held by various classes of mortgagees, as the latter would naturally keep the loans on which they expected no losses. It is interesting, therefore, that the HOLC has succeeded in liquidating a large part of its investment with very little loss. The HOLC ceased taking over loans in 1936, according to law, and remained in existence only to liquidate its holdings. Even with the modernized mortgage provided by the HOLC some borrowers were unable to service their loans, and the properties were taken over by the agency. These properties were then sold to others, with new mortgages. Some losses have been taken on these foreclosures, as was to be expected. On the whole, however, it appears that the HOLC will wind up its existence with an amazingly small over-all loss, if any. The wartime prosperity was, of course, a potent factor in allowing mortgagors to pay their debts and also in allowing the HOLC to dispose of properties in its possession.

The total amount of bonds issued to mortgagees just exceeded \$3,000,000,000, while about \$400,000,000 was advanced to borrowers. The process of liquidation was half accomplished by 1943. More recent figures on the status of HOLC loans and properties show that in April, 1946, the HOLC held only 147 properties valued at \$769,000, and that mortgage debts owed to the Corporation had been reduced to \$510,598,000 for the original distress loans and \$262,752,000 for loans made to purchasers of foreclosed properties.¹⁰ The HOLC investments in the shares of savings and loan associations were also heavily reduced by the end of the war. Of the \$223,857,000 of shares of Federal and state associations held by

¹⁰ *Federal Home Loan Bank Review*, June, 1946, p. 278.

the HOLC all but \$17,999,000 had been repurchased by March, 1946.¹¹ Similarly, the Federal associations had repurchased from the Treasury all but about a million dollars' worth of the \$49,300,000 which had been invested in their shares in 1933-1935.

The Federal Housing Administration

The National Housing Act of 1934 established a system of government-sponsored insurance of mortgage loans in order to "un-freeze" funds for mortgage lending and also to standardize and improve mortgages in order to increase their liquidity. Loans by approved lenders on mortgage security were eligible for insurance if the loans were for certain purposes and met certain other tests of eligibility. The parts of the act dealing with the purposes of the eligible loans, as provided for in the original act and several other amendments, may be outlined as follows :

Title I.

- A. Modernization and renovation loans. Such loans, when they are repayable on the installment plan and when interest rates, finance charges, and fees do not exceed stated maxima, are eligible for insurance. Insurance premiums are $\frac{1}{2}\%$ for residential construction and $\frac{3}{4}\%$ for nonresidential.

- B. New construction: summer and resort homes, small farm buildings and the like. This type of construction was brought under Title I in 1938 and suspended in 1944.

Title II.

- A. Section 203 provides for insurance in the Mutual Mortgage Insurance Fund of mortgages on new small homes (one- to four-family). The property must meet FHA standards, and the loan must be amortized at an interest rate not to exceed $4\frac{1}{2}\%$. The mortgagee may charge an additional $\frac{1}{2}\%$ for servicing the loan and the insurance premium is $\frac{1}{2}\%$. Loans may amount to 90% of the value of property appraised at not more than \$6,000. Larger properties are subject to modified limitations, the lowest being 80% for properties in excess of \$10,000. The maximum appraisal is \$16,000. The 90% loans may run for as long as 25 years.

¹¹ *Ibid.*

B. Section 207 provides for insurance of rental housing mortgages, where again FHA standards must be met. The maximum interest rate is 4%.

Title VI.

A. Section 603 provides for insurance on mortgages on one-to four-family homes constructed in war housing areas, and

B. Section 608 makes similar provision for multifamily rental projects in war housing areas.

In case of mortgage default, the FHA gives the mortgagee debentures in exchange for the foreclosed property. These debentures carry 2¾% interest and mature three years after the maturity of the mortgage. The Mutual Mortgage Insurance Fund reimburses itself through disposal of the property. The debentures are first liens on the fund, and are also government-guaranteed, principal and interest. If no loss is imminent, the mortgagee may, of course, dispose of the property himself.

TABLE 40

FHA INSURED HOME MORTGAGES HELD,
BY CLASS OF INSTITUTION,
DECEMBER, 1945
(millions of dollars)

Mortgagee	Face Amount
Savings and loan associations	404
Insurance companies	1,557
Mutual savings banks	418
Commercial banks	1,954
Government agencies	40
Individuals and others	187
Total	4,563

Source: *FHLB Review, Statistical Supplement*, April, 1946, p. 27.

The Mutual Mortgage Insurance Fund became self-supporting a few years after its establishment, and since 1940 it has met all expenses, including losses, from premiums and fees (and income on investments). At the end of 1944 the fund amounted to \$83,000,000, including the original contribution of \$10,000,000 from the gov-

ernment, and it became possible to pay dividends to mortgagors who paid off their mortgages.¹² The volume of home mortgages insured by the FHA at the end of 1945 is tabulated above according to class of institution holding the mortgages. An important factor in the success of the FHA insurance program has been the low ratio of defaults on insured loans. It would be difficult to assign the proper proportion of credit for this record to FHA standards and to economic conditions, respectively. A comparison of insured with uninsured mortgages would not be conclusive, since the soundest loans may not be insured. The steady improvement in the default ratio during the war years of high incomes and housing shortages is clearly indicated in the figures in Table 41.

TABLE 41

FORECLOSURES AND DEFAULTS, HOME
MORTGAGES INSURED UNDER TITLE 203

Year	Foreclosures, ¹ Cumulative Through End of Year, % of Total Insured	Mortgages in Serious De- fault at End of Year, % of Insured Mortgages
1935	.01	. .
1936	.03	.05
1937	.12	.19
1938	.30	.29
1939	.45	.40
1940	.56	.33
1941	.56	.22
1942	.53	.12
1943	.52	.04
1944	.50	.03

Source: Federal Housing Administration, *Annual Report*, 1944, Table 10.

¹ Titles acquired by mortgagees through foreclosure proceedings or deeds in lieu of foreclosure.

An important development following upon the wide adoption of FHA mortgage insurance was the expansion of the secondary market for mortgages. Prior to 1935 mortgages were seldom transferred; there was no market for them such as there was for bonds, because each mortgage differed from each of the others. No two properties

¹² Federal Housing Administration, *Annual Report*, 1944, p. 98.

were identical, the borrowers differed, and so forth. Insured mortgages, however, are secured by properties that meet FHA standards of location, construction, and design, and the borrowers have been approved. Furthermore, the holder is insured against loss on his mortgage investments. As a result, many loans are *originated* by lending institutions or mortgage brokers that do not hold them. In addition, lending institutions buy mortgages that they do not originate.

The Veterans Emergency Housing Act of 1946 amended Title VI of the National Housing Act to increase the limit on the total amount of mortgages that may be insured. A particularly important revision affects the amount that may be lent to veterans in relation to appraised value. Under this revision, loans up to 90% of "necessary current cost" may be eligible for insurance. The regular Title II loans may not exceed 90% of the "appraised value on economically sound" projects. Thus the inflated costs of construction existing in the post-war period may be included in the appraisal as a basis for insurance of veterans' loans. Additional "equity" loans for the purchase or construction of homes were made available to veterans through the Veterans Administration.

Financing Low-Rent Housing: Federal Public Housing Authority

The problem of slum clearance became acute along with other real-estate problems during the 1930's. The reforms of mortgage financing described above made little impression on this problem since the slum problem existed simply because potential rents did not promise to cover the cost of tearing down the slums and constructing new dwellings. For social reasons the Federal government therefore adopted a program of replacing slums with various types of projects outside the field of private finance. Attention is here confined to the methods employed to finance these and other real-estate projects.

The first step was taken when the RFC was authorized to make loans to limited-dividend projects. In return for the RFC loan, associations were to agree to limited dividends from the rentals of the new construction. Only one project, the Knickerbocker Village in New York City, was undertaken. Later, seven such projects were financed with Public Works Administration loans under the National Industrial Recovery Act.

A second step was the direct construction of low-rent homes by the Federal government. The Federal Emergency Relief Administration, the Resettlement Administration, and the Subsistence Housing Division of the Department of the Interior variously constructed houses as relief or recovery measures.

The third step, the United States Housing Act of 1937, was the culmination of attempts to correct the mistakes of previous ventures. It was also designed to bring into the field of low-rent housing the funds of private investors and local governments. Under this act local housing authorities may be established under state laws. The local authorities choose slum areas to be rehabilitated, and must destroy or renovate one slum dwelling unit for each new one to be built. The local authorities themselves initiate the dwelling projects and at first finance the construction, usually with short-term loans. As the projects near completion they are refinanced by the sale of bonds, which may run for as long as 60 years. The Federal Public Housing Authority may buy up to 90% of these bonds; in other words, lend 90% of the cost of the projects. However, the bonds sold to the FPHA carry higher interest rates than do those sold to the public, so that the local authorities are influenced to sell as large a proportion as possible to the public and amortize those held by the FPHA as quickly as possible. Some projects have been financed entirely or almost so by sale of bonds to the public.

Rents on these public projects are geared to the incomes of renters, who must meet the eligibility requirements of the act. The rents are not sufficient to carry the cost of the buildings and repay the bonds, in most instances, so that a subsidy is required. Local governments are required to pay at least a fifth of the annual subsidy, in which case the FPHA is authorized to meet four-fifths from congressional appropriations. The principal argument for the arrangement is that the local governments gain on balance through the elimination of the slums and the costs they entail in fire, police, and health protection. The local contribution may take the form of tax exemption, although payments to the local governments by the local housing authorities in lieu of taxes are common. By the end of 1944 the Federal subsidies under this program were \$38,775,000.¹³

During the war the United States Housing Act was amended to

¹³ Federal Public Housing Authority, *Annual Report*, 1945, p. 35.

provide for construction of housing in war production areas. War workers were eligible as tenants without regard to income, but the properties were to become low-rent projects after the war. In addition the Authority was given the task of providing with Federal funds temporary homes, trailers, dormitories, and the like in war production areas.

Summary of Government Operations

The operations of the principal government agencies operating in the urban real-estate finance field may now be summarized. At the center stands the Federal Home Loan Bank System, comprised of the twelve Federal Home Loan Banks and the various member institutions, nearly all of which are savings and loan associations, either state or federally chartered. The Savings and Loan Insurance Corporation insures the shares of member associations. The Federal Housing Administration, through the Mutual Mortgage Insurance Fund, insures mortgage loans held both by members of the Home Loan Bank System and by others. The Federal Public Housing Authority operates in the field of low-rent housing, helping to finance slum-clearance projects.

Agricultural Credit

This section is designed to give the student a condensed summary of the outstanding characteristics of agricultural credit and a bird's-eye view of the organizations operating in the field. It is by no means a complete treatment of the subject. As is the case with the preceding section on urban mortgage credit, the reason for its inclusion is to broaden the description of commercial banks by paying some attention to a particular branch of their operations and to their competitors in the field. Farm-mortgage credit and other forms of agricultural credit are considered.

Nature of Agricultural Credit

Most farms are small businesses combined with homes. Farmers, as a rule, must therefore look to institutions willing to make small loans; the ordinary money markets are not open to the individual farmer. The business aspects of farm credit are usually blurred by the fact that the farm is also a home. Farm loans may be combina-

tions of production and consumption credit. The special risks of farming create additional problems. Some of the farmer's credit needs are long term, such as the purchase of the farm itself. Others, although not long term, extend over several seasons or years, such as the purchase of equipment, livestock, and improvements. Still other credit needs stem from short-term factors, such as the marketing of a crop.

The seasonal nature of farm operations and the risk of weather, as well as the nature of the demand for farm products, create special problems. The demand for most farm products is inelastic, so that prices change considerably with changes in quantities. The individual farmer may fail to realize an anticipated income because of his own crop failure, or because of bumper crops elsewhere which depress prices. On the other hand, he may make a "killing" if his own crop is good while other factors create a high market price.

Much of the farm land originally was homesteaded as free land or purchased from the government at \$1.25 an acre. As the homestead land was taken up, its market value rose, being influenced by the prospective value of future crops. The theoretical value of a farm is the present value of the future annual incomes. Farm values are apt to fluctuate sharply as farm incomes are capitalized; high current incomes are likely to be capitalized optimistically and low current incomes pessimistically. Thus speculation often has played an important role in determining the market value of farm lands, purchases having been made for resale on rising markets. One of the farmer's severest problems has been the mortgage debt created by purchases when prices were high, with the consequent heavy load of interest and repayment to be met when farm incomes became less.

Private Lenders

Until the establishment of government agencies, to be discussed below, farmers met their credit needs by borrowing from banks, insurance companies, mortgage companies, and individuals. Individuals have historically been the major category of lenders. Often the seller of a farm takes a mortgage from the buyer, and other individuals lend their savings locally on mortgage security. Commercial banks have generally been unsatisfactory sources of agricultural loans. Prior to 1913, national banks could not make long-term

loans on real-estate security. The intermediate credit needs of the farmer could not be met satisfactorily by the commercial banks because of the length of the loans. Often short-term loans which had been made with the expectation of renewal, were not renewed because of inability or unwillingness on the part of the banks to do so, owing to changes in their deposits. Probably just as often, short-term loans had to be renewed because market conditions made it impossible for the farmer to pay. Such "frozen" paper might be carried through several years until a good year enabled the farmer to pay his debts.

Mortgage brokers and bankers early began operations in the farm-mortgage field. Mortgage brokers were usually local operators, bringing borrower and lender together for a commission. Mortgage bankers generally operated on a larger scale, made loans on farm-mortgage security, and resold the loans to investors. The activities of mortgage bankers have gone through several periods of expansion and contraction; an era of speculation just prior to 1900 ended in greatly reducing their activities. Later on they again became important, particularly in locating and investigating loans for insurance companies.¹⁴ Some insurance companies have preferred to make their own loans directly; others have relied on mortgage bankers or agents to provide them with loans.

World War I witnessed a decided rise in the prices of farm products and farm lands, and an increase in mortgage indebtedness based on the inflated values. In 1910 the farm-mortgage debt in the United States was about \$3,200,000,000, which had increased to about \$8,500,000,000 in 1920 and to a peak of \$10,785,000,000 in 1923.¹⁵ The agricultural depression of the 1920's led to a gradual reduction of the debt. As farms changed hands new mortgages were given; if the farm had been foreclosed and sold at a price lower than its valuation when the loan was granted, the new mortgage was probably smaller than the one it replaced. During the depression of the 1930's the farm problem became particularly acute. Many foreclosures were forced upon lenders in order to protect their capital, and rock-bottom farm prices led institutional lenders to hold

¹⁴ For a description and history of farm-mortgage lending, see A. M. Woodruff, Jr., *Farm Mortgage Loans of Life Insurance Companies*, Yale University Press, 1938.

¹⁵ Secretary of Agriculture, *Annual Reports*.

real estate for higher prices. Some real estate was resold to the original owners, but a large *overhang* still existed at the end of the decade. As a result of this foreclosed real estate the volume of mortgage credit outstanding was decreased. During the war much of the overhang was sold, a circumstance which helped to hold down farm prices until rather late in the war. The investment value of farm land held by lenders was estimated at \$950,000,000 in 1940 as compared to only \$150,000,000 in 1945.¹⁶ At the same time, other mortgage loans were being repaid, so that the total farm-mortgage debt declined during the war. The total was estimated at \$5,271,000,000 at the beginning of 1945, a reduction of over \$1,000,000,000 since January 1, 1940 and of over 50% since 1923.¹⁷ Thus at the end of the war many farmers were out of debt, both short-term and long-term, while on the other hand farmers who had recently bought land at high prices were carrying larger than average mortgages.

TABLE 42

FARM MORTGAGE LOANS, BY LENDER,
1935-1945
(millions of dollars)

Year Ended June 30	Loans Made		Mortgages Recorded				
	Federal Land Banks	Land Bank Com'r.	Indi- viduals	Com- mercial Banks	Insur- ance Co's	Other	Total
1935	448.9	368.1	245.1	139.3	62.5	72.4	1,336.3
1936	163.7	119.0	251.4	173.9	95.4	71.2	874.6
1937	77.0	52.2	265.7	208.8	127.9	51.3	782.9
1938	55.4	33.1	249.3	205.0	133.3	55.0	731.1
1939	51.0	27.6	224.5	213.6	137.4	66.3	720.4
1940	55.7	30.1	224.1	221.6	149.5	72.8	753.8
1941	69.1	40.0	237.2	222.7	152.1	90.6	811.7
1942	61.5	34.7	252.1	210.4	165.1	104.2	828.0
1943	53.4	26.4	290.4	205.2	158.7	72.7	806.8
1944	64.2	31.1	381.7	250.8	167.4	74.1	969.3
1945	79.0	39.3	398.6	274.7	145.8	59.7	997.1

Source: Farm Credit Administration, *Annual Report*, 1945, p. 83. (Mortgages recorded are estimates based on reports from counties including from 30 to 48 per cent of the farms in the United States.)

¹⁶ Secretary of Agriculture, *Annual Report*, 1945, p. 62.

¹⁷ *Ibid.*, p. 58.

The relative importance of various long-term lenders of agricultural credit may be observed from Table 42, which shows the estimated amount of farm mortgages recorded during each year from 1935 to 1945 by various private lenders, and the loans made by the Federal Land Banks and the Land Bank Commissioner.¹⁸ The declining proportion of Land Bank and Commissioner loans and the increasing volume of individuals' and commercial bank loans after 1940 is apparent. As will appear below, the former types of loans often merely refinanced loans obtained from other sources.

Government Agricultural Credit Agencies

The agricultural credit activities of the Federal government today are consolidated mostly in the Farm Credit Administration. Except for occasional reference, the history of the component parts of the system will not be described here. Several independent agencies created at different times were brought under the newly created Farm Credit Administration in 1933. The order in which the various components of the system are treated in the following brief description is therefore not chronological. The FCA is part of the Department of Agriculture, but proposals have been made to make it independent, like the Federal Reserve System.

The Production Credit System

The Production Credit System embraces twelve production credit corporations, numerous production credit associations, and twelve Federal Intermediate Credit Banks.¹⁹ The system is designed to provide a mechanism whereby farmers and stockmen may tap central money markets in order to obtain funds at lower interest cost. The production credit corporations purchase the stock of local production credit associations. More than 369,000 farmers and ranchers were members of the 514 active production credit associations on June 30, 1945, the highest membership of their history to that time. The associations also raise funds by sale of stock to member-borrowers; each borrower must buy at least \$5.00 worth of stock per \$100 of

¹⁸ These are new loans. With the exception of 1943 more new loans were made each year after 1939 but repayments reduced the total outstanding.

¹⁹ Technically the Intermediate Credit Banks are not part of the Production Credit System, but their operations are such that they are so classified here

loan. The funds obtained from the sale of stock are invested in government securities, and these in turn are used by the associations to collateral the borrowers' notes which the associations discount at the Intermediate Credit Banks. To complete the chain, the latter banks use the discounted notes as collateral for their debentures, which are sold through regular investment channels. In this manner, money market funds are channeled into agricultural uses.

The production credit corporations, with which we started the chain, were originally financed by Treasury purchase of stock. The funds so obtained were passed on to the associations through the purchase of their stock. In recent years the associations have grown sufficiently that less assistance from the corporations has been necessary and the latter have returned an appreciable proportion of the government's contribution.²⁰

The production credit associations make short- and intermediate-term loans for such general agricultural purposes as the feeding and breeding of livestock, the raising and marketing of crops, the purchase of fertilizer, seed, or equipment, and the refinancing of loans obtained elsewhere for similar purposes. The maximum maturity is one year, although renewals may extend the maximum to three years. Maximum interest rates are geared to the discount rates charged by the Federal Intermediate Credit Bank of the district; they may exceed it by 3% but usually do not.

Federal Intermediate Credit Banks

These banks were established in 1923, ten years prior to the other institutions just discussed, and their operations are not confined to lending to production credit associations. Approximately 75% of their loans in 1945 were to production credit associations, and the remainder were to private lending institutions, banks for cooperatives, and farmers' cooperative associations. As mentioned above, the funds for these discounts and loans are obtained from the money

²⁰ On June 30, 1945, the associations had outstanding \$55,700,000 of Class A stock held by the corporations, \$3,800,000 of Class A stock held by individuals and \$27,400,000 of Class B stock held by member-borrowers. Only the Class B stock has voting rights, and each member has one vote regardless of the amount of stock. The members elect a board of directors who in turn choose two members and the secretary-treasurer to act as a loan committee. The secretary-treasurer often serves more than one association. (Farm Credit Administration, *Annual Report*, 1945.)

market through the sale of debentures. These consolidated collateral trust debentures are considered prime investments. They are not guaranteed, interest or principal, by the government. The debentures are sold in monthly offerings; thus in 1945 these offerings totaled nearly \$400,000,000, and at the end of the year they were outstanding in the amount of \$265,000,000. The debentures bore interest rates of less than 1% and the banks rediscounted loans for production credit associations and others at $1\frac{1}{2}\%$.²¹ The latter could therefore charge up to $4\frac{1}{2}\%$.

Banks for Cooperatives

In 1933 Congress established a system of 12 regional banks for cooperatives and a central bank for cooperatives. These banks are now part of the Farm Credit Administration. The capital of the banks was provided by the government and may be increased by the Governor of the Farm Credit Administration from funds at his disposal. The borrowers are farmers' cooperatives, which must purchase additional capital stock in proportion to their loans. There are three types of loans: commodity loans, operating capital loans, and facility loans. The amount of stock that must be bought is 1% for commodity loans and 5% for the others; the stock may be retired when the loan is repaid. The commodity loans are for the purpose of permitting "orderly" marketing of commodities by the cooperatives. Such loans permit them to hold commodities for the best seasons of the year. Operating capital loans, as the name indicates, are for the general operating capital needs of cooperatives. The facility loans finance construction of such facilities as cottonseed processing plants, poultry processing and storage plants, and the like. During the war such loans financed the construction of several milk processing plants to produce dried and condensed milk. In recent years wheat and cotton have been the largest fields of financing by these banks.

From their organization in 1933 until June 30, 1945, the 13 banks for cooperatives advanced \$2,177,121,304 in credit to 3,363 farmers' cooperatives. On June 30, 1945, 92.6 per cent of this amount had been repaid, 7.2% was still outstanding, .09 of 1 per cent was included in liquidation accounts, and .05 of 1 per cent had been charged off as uncollectible.²²

²¹ Farm Credit Administration, *Annual Report*, 1945, p. 8.

²² *Ibid.*, p. 11.

TABLE 43

FARM CREDIT ADMINISTRATION INSTITUTIONS,
LOANS OUTSTANDING,
JUNE 30, 1945
(millions of dollars)

Institution	Amount
Farm mortgage loans:	
Federal land banks	1,061.2
Land Bank Commissioner	308.9
Joint-stock land banks ¹ .....	.8
	<u>1,371.0</u>
Short-term credit:	
Production credit associations ²	266.7
Federal intermediate credit banks (exclusive of loans to cooperatives)	314.9
Emergency crop loans	111.8
Drought relief loans (1934-1935)	35.7
Orchard rehabilitation loans .....	...
Regional agricultural credit corporations	9.5
	<u>738.7</u>
Loans to cooperatives:	
Federal intermediate credit banks .....	.8
Banks for cooperatives	134.8
Agricultural m'k'ting act revolving fund	2.0
	<u>137.7</u>
	<u>2,247.5</u>
Less Federal intermediate credit bank loans to and discounts for other FCA institutions	285.0
Net	<u>1,962.4</u>

Note: Totals do not check because of dropped digits.

¹ Includes data for banks in receivership.

² Includes data for associations in liquidation.

Source: Farm Credit Administration, *Annual Report*, 1945, p. 55.

Farm Mortgage Credit System

The Federal farm mortgage credit system may be described in terms of the Federal Land Banks, the national farm loan associations, the Land Bank Commissioner, and the Federal Farm Mortgage Corporation. The Joint Stock Land Banks, previously of some importance, are now nearing final liquidation.

The Federal Land Banks, dating back to 1916, provided the model on which some of the agencies described above were based. There are twelve land banks, located in districts of varying agricultural interests, with boundaries following state lines.²⁸ Capital for the banks was subscribed almost entirely by the Treasury, a small amount having been taken by the public. Mortgage loans are channeled to farmers through national farm loan associations. Member-borrowers of the associations first make application for loans to their local association. If the application is approved by the loan committee (two members and the secretary-treasurer) the Federal Land Bank of the District examines the application. If the loan is granted, the borrower must purchase shares in the association equivalent to 5% of his loan. At the same time, the association purchases an equivalent amount of the stock of the Federal Land Bank.

The Treasury's stock was to be retired as the capital contributed by the associations grew, and accordingly it had been retired by 1934. At that time the land banks were strengthened by a new purchase of \$125,000,000 of stock by the Treasury. The Farm Credit Administration and the land banks later adopted a plan to retire this government capital by 1946 except in the case of one land bank whose capital had been too seriously impaired by depression losses.

Returning to the loans, the associations become liable for loans made by the land banks to their members. The associations also, as a rule, service the loans for their land banks, for which they are paid by the latter. The funds available for land bank loans, aside from capital, come from the sale of bonds. Since 1939 these bonds have been the consolidated obligations of the 12 banks; prior to that time the individual banks issued their own bonds, although the banks were jointly liable for each other's bonds. The bonds are not guaranteed by the government, and they may be issued in an amount up to 20 times the capital and surplus of the banks.

The decline during the war years in outstanding farm mortgage indebtedness carried with it a reduction in the outstanding bonds of the bank system. Several issues became callable during the war and were either retired or replaced with a new issue bearing only 2½%, compared to the 3% to 4% on the older bonds. On June 30, 1945, outstanding bonds totaled \$685,000,000. The land banks had also

²⁸ This is because of varying state real-estate and mortgage laws.

borrowed approximately \$146,000,000 from commercial banks.²⁴

Land bank loans mature in from five to forty years. Especially in the earlier years of the banks' operation a disappointingly small proportion of the loans were for purchases of land, one of the Congressional objectives. Rather, the largest single group of loans was that for refinancing debts incurred elsewhere. One recurring purpose of the loans from year to year is the purchase of national farm loan association stock, as the stock which borrowers must buy may be purchased with the proceeds of their loans. Aside from refinancing, purchase of farm land, construction of buildings or improvements, and other long-term uses account for the bulk of the loans. Loans could not exceed 50% of the appraised "normal" value of the mortgaged property until 1945 when the limit was increased to 65%.²⁵ The Farm Credit Administration and the land banks have devoted a great deal of study to the problem of appraisals. Their efforts to appraise farms at normal values doubtless had some effect in retarding the inflationary rise of farm prices during and after the war, by restricting the volume of funds available for purchase of land.

Commissioner Loans: Federal Farm Mortgage Corporation

The Federal Farm Mortgage Corporation may be compared to the HOLC in the urban mortgage field; it was established during the depression to provide mortgage credit to borrowers who could not obtain such credit elsewhere. The Corporation, like the HOLC, now appears to be decreasing in importance. The Corporation, established early in 1934, was provided with government capital. It also was empowered to sell bonds guaranteed by the government. At that time the land banks were having difficulty selling their unguaranteed bonds in the volume required for their loans. Hence, one function of the Corporation was to provide funds to the land banks; it performed this function by the simple method of trading its own bonds for land bank bonds. The land banks in turn sold the guaranteed bonds instead of their own.

A second function of the Federal Farm Mortgage Corporation was to provide funds for *Land Bank Commissioner loans*. The Commissioner was empowered to make loans, for the Corporation, that

²⁴ FCA, *Annual Report*, 1945, p. 17.

²⁵ Public Law No. 98, Seventy-ninth Congress.

would be ineligible for the land banks. These loans could be secured by second mortgages as well as first mortgages, and they could exceed the more conservative loans of the land banks (generally up to 75% of normal value). Often a farmer has a first mortgage on his property, held by a land bank for a loan made through his national farm loan association, and a second mortgage, held by the Federal Farm Mortgage Corporation for a loan made by the Commissioner. The Corporation acts through the land bank organization and personnel; it is mainly a source of funds for these more or less "distress" loans. The authority of the Commissioner to make loans has been extended from time to time, as it is not a permanent authority. The interest rate on Commissioner loans was established by law at 5%, but Congress provided for lower rates between 1937 and 1945, the Treasury reimbursing the Corporation for the difference.

The amendment mentioned above whereby the land banks may lend 65% rather than 50% of normal value, together with the improved economic condition of farmers, has led to a decline of Commissioner loans. In the future borrowers who have reduced their loans to come within the 65% figure are expected to refinance such loans at their land banks, through their local farm loan associations.²⁶ The peak lending of Corporation funds came in 1934, when 177,000 second mortgages and 129,000 first mortgages were made for total loans of \$553,000,000. The highest volume of loans outstanding came in 1936 with about \$836,000,000 but this had been reduced to about \$308,000,000 in 1945.²⁷ In 1941 the Corporation repaid the Treasury half of the \$200,000,000 it had contributed to the Corporation's capital and in 1945 an additional \$50,000,000, leaving only \$50,000,000 of government capital in the Corporation.

Joint Stock Land Banks

The Federal Farm Loan Act of 1916, which established the Federal Land Bank System, also provided for a system of privately owned and operated joint stock land banks, in order that the existing mortgage bankers might continue in operation and supplement the land banks. Prior to 1933, 88 such joint stock banks were incor-

²⁶ In addition, the Corporation may transfer old loans to the land bank of the farmer's district, when they have been paid down to conform to eligibility, if he is willing to buy the required 5% of stock in his farm loan association

²⁷ Farm Credit Administration, *Annual Report*, 1945, p. 28.

porated. These banks operated on the principle that they would sell bonds secured by farm mortgages, obtaining funds for loans in this manner as well as from the capital contributed by stockholders. Bonds could be sold to the extent of 15 times capital stock, and the interest rate on their mortgage loans was limited to 5½%. Unfortunately, the land banks as a group failed rather miserably, partly because of fraud at some banks. Several were in receivership by 1933, when Congress ordered their liquidation. By June, 1945, there were only eleven banks left, four of these in liquidation and two in receivership, and their outstanding indebtedness amounted only to about \$1,000,000. At the height of their operations, their loans seldom exceeded half of those held by the land banks.²⁸

Other Government Loans

Various special conditions have led the government to make available other types of loans. Emergency Crop and Feed Loans may be made by the Farm Credit Administration in amounts up to \$400 for the production of cash crops or for the production or purchase of feed for livestock, if the borrower is unable to obtain "reasonably adequate" loans elsewhere. Between 1918 and 1945 over 4,000,000 such loans were made aggregating \$485,000,000. Following the famous drought of 1934, Congress authorized drought relief loans, which amounted to over \$70,000,000 in 1934-1935. The Regional Agricultural Credit Corporation may make loans in designated areas when specifically authorized by the Secretary of the Treasury. This Corporation lent several million dollars as part of the food production program during the war. A revolving fund was appropriated by Congress in 1929 known as the Agricultural Marketing Act Revolving Fund, to be employed in loans to finance marketing of certain farm products. The fund is being liquidated, as the banks for co-operatives perform the same functions. At various times Congress has made available loans for a variety of purposes, such as for rural

²⁸ Statistics from Farm Credit Administration, *Annual Reports*. A leading example of the liquidation of the Joint Stock Land Banks is provided by the St. Louis Joint Stock Land Bank. It was placed in receivership in 1932, when its outstanding bonds exceeded \$18,000,000. Bondholders received 82% of their claims and unsecured creditors, 3%; bondholders of affiliated banks got up to 100%. Liquidation was not completed until 1945.

electrification. A complete list of these credit sources would take us far into the field of social reform and would not add greatly to the description of the institutions that compete with or cooperate with the commercial banks.

XXII

BANKING CONCENTRATION

THE BANKING SYSTEM of the United States is unique in that it is composed of several thousand banks. The great bulk of the commercial banking business in England is done by five great banks which have numerous branches. Similarly, through mergers and consolidations the Canadian banking system has been reduced to ten banks, of which four do most of the business. American banking makes a sharp contrast to many other business enterprises. Steel companies may have plants on both seacoasts and in the interior; tin can companies may have plants in each principal can-consuming area; a few automobile companies make up the entire industry; and there are many examples of companies operating on a nation-wide scale. In the field of finance, life insurance companies sell policies all over the country and lend their funds on mortgage security in wide-spread areas. In respect to size distribution, banking is more like farming: there are a few giant firms but thousands of small local ones.

Ever since the growth of the free-banking idea, it has been relatively easy to organize banks, especially with state charters. There is supposedly something typically American in having an occupation open to all who can meet minimum qualifications. While in certain

other fields corporations grew to such size that newcomers were discouraged by the formidable competition they would have to face, there were various reasons why this development did not shut off the formation of new unit banks. Figure 27 shows the numbers of new banks organized in the twenty-year period 1921-1941. The high point was reached in 1934 with 511 new banks, many of which were successors to failed banks. Previously, the 458 banks in 1923 represented the peak for any year.

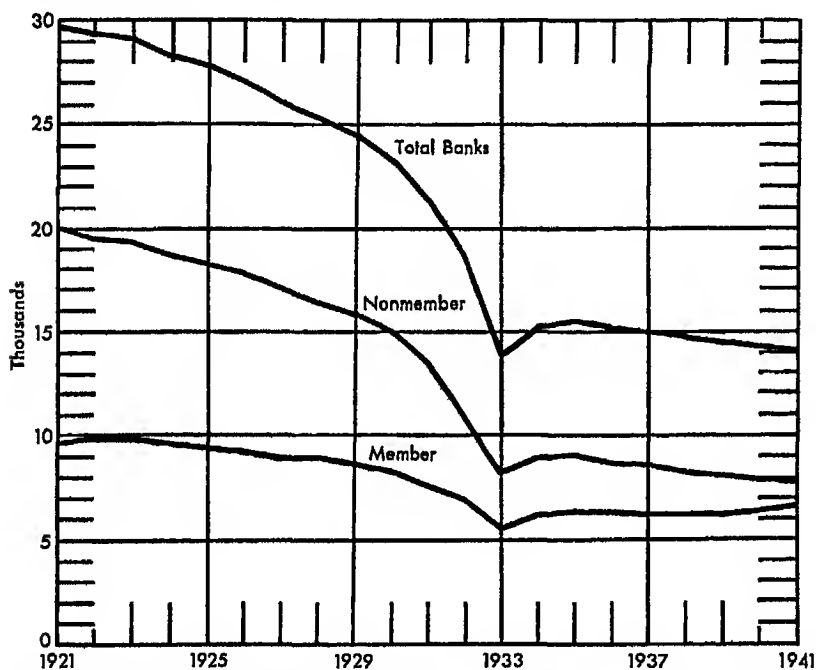


FIG. 26.—Number of Member and Nonmember Commercial Banks, 1921-1941. (Data from *Banking and Monetary Statistics*, p. 16.)

Although the American banking system is predominately a unit system, there are several types of concentration of the banking system. On the one hand, there is the growth of unit banks, sometimes accelerated by mergers or consolidations. On the other hand there are branch banking, chain banking, group banking, and affiliates. These will be described in this chapter, along with some of their advantages and disadvantages.

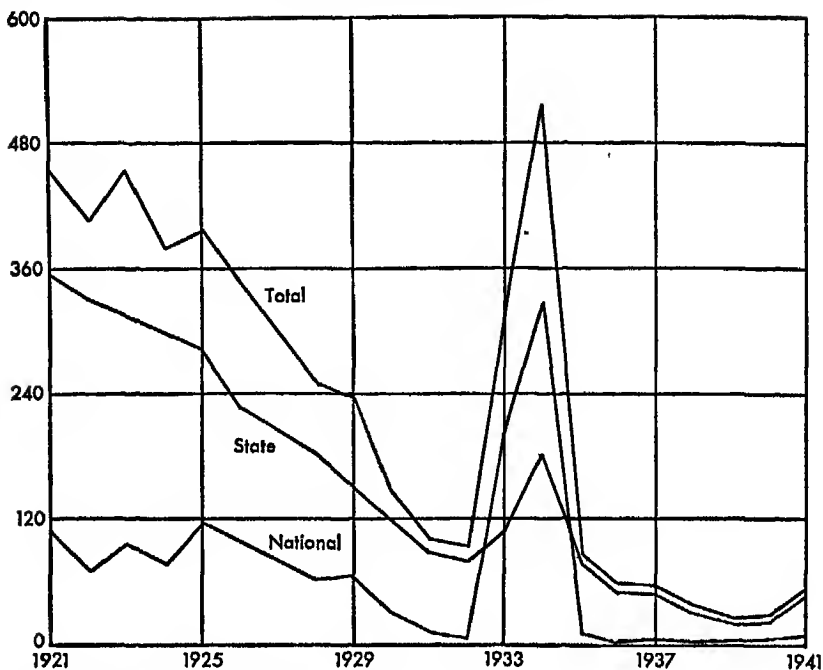


FIG. 27.—New Commercial Banks Formed, 1921-1941. (Data from *Banking and Monetary Statistics*, p. 16.)

Branch Banking

"Branch banking is a type of multiple office banking under which a bank as a single legal entity operates more than one banking office."¹ A bank may have a single branch in another part of the same city for the convenience of its customers, or it may operate numerous branches in various parts of its home state. Both such banks would be included in the statistics for branch banking, but it is apparent that the term covers different situations in these two cases.

Legal Status

State and Federal laws limit (or prohibit) the operation of branches in the different states. A complete survey of the legal status of branch banking is more complicated than is necessary for the requirements of this text; it will be sufficient to indicate the nature of

¹ *Banking and Monetary Statistics*, p. 294.

state laws in general and the status of banks operating under Federal law in this respect.² As will be developed more fully below, a "true" branch banking system covers a wide enough area to provide considerable diversification of assets and deposits. The widest area in which branch banking is permitted is the state, and only 18 states permit statewide branch banking. Elsewhere, state laws prohibit branch banking or allow it in limited areas: the home office city, home office county, or contiguous counties. Some states permit the operation of "additional offices" with limited functions. Usually these are merely "tellers' windows" to receive deposits and cash checks for the convenience of customers.

The National Banking Act, as amended in 1865, permitted state banks to join the National Banking System and to keep branches previously acquired, although national banks were not permitted to establish branches. The Federal Reserve System was opened to state banks without requiring them to give up branches, but a 1924 regulation required state member banks to obtain approval of the Board before establishing additional branches. In 1922 the Comptroller of the Currency recognized the competitive advantage held by state banks and interpreted the National Banking Act to permit national banks to establish branch offices in home office cities where state banks were authorized to do so by state law. In 1927 member banks, state and national, were covered by the McFadden Act, which extended the interpretation just mentioned. It permitted national banks to establish branches in home office cities where state banks could do so, but forbade state member banks from establishing any new branches except in home office cities. A concession was made in the Banking Act of 1933, whereby member banks (state or national) could establish branches as permitted by state laws. Capital requirements contained in the act are generally higher than those imposed by state law, however. The Federal government extended its control of branch banking in the Banking Act of 1935, in relation to deposit insurance. The Federal Deposit Insurance Corporation is authorized to approve or disapprove the establishment of new branches by insured nonmember banks. This is the only Federal control over nonmember banks, and leaves only uninsured banks completely under

² For additional information see *Banking Studies*, Board of Governors, 1941, pp. 113-143.

state legislation. In general, it is apparent that legislators have refused to pave the way for widespread branch systems.

Relative Advantages of Branch Banking

Prior to the Civil War it was not unusual for banks to grow by establishing branches. The First and Second Banks of the United States had operated branches, as did many state-chartered banks. When the National Banking Act failed to provide for branches, and the tax on state bank notes greatly reduced the number of state banks temporarily, banks with branches declined greatly in importance. Since that period, however, branch banking has grown, and at times it has been an important controversial subject of legislation. There is still no true branch banking system, however, in the sense of a system extending beyond state lines.

The most obvious advantage attaching to a branch banking system is the diversification it makes possible. This potential diversification affects both the deposits and the assets. Deposits are received in all the areas served. Funds may be withdrawn in one area while they are deposited in others. The result is a more efficient utilization of reserves than would be possible if banks in each area maintained separate reserves. Likewise, loans are made in each area, so that an area with seasonal increases may utilize funds which are being repaid in another area. Banking safety should be increased too because local depressions, as in an agricultural area, may be offset by stability in other areas served by the bank. The inability of borrowers to repay promptly in one area thus need not lead to bank failures.

A bank which, through its various branches, is able to absorb funds in several areas and lend them in other areas would acquire deposits where savings are plentiful and make loans where capital is scarce and interest rates high. This diversity would tend to provide loans where they are most needed, and also to even out interest rates between areas. Some of the agencies described in the chapter on mortgage credit have been designed to accomplish this in more roundabout ways.

To some extent, the Federal Reserve System obtains these results with the unit banking system. As funds are more fluid, it is much easier for banks in various sections of the country to provide seasonal loans than before the establishment of the system. Similarly, the ex-

istence of a commercial paper market also enables banks anywhere to lend to borrowers anywhere; borrowers in high interest rate areas tend to sell their paper in low-rate areas. Opponents of branch banking point to the commercial paper and acceptance markets in their argument that branch banks are unnecessary for diversification of loans.

Other advantages claimed for branch banking involve bank management. Presumably if there were only a few large banks, the top management positions would be filled with the best talent available. It is virtually inevitable that in a system of 14,000 commercial banks there should be at least some incompetent management. On the other hand, incompetent management would be more disastrous in the case of a big system than in that of a small bank if the failure of the bank should be the result.⁸ Local branches would be managed by subordinate officials subject to the policy of the home office. On the one hand, this has been considered advantageous in that branch managers as opposed to local unit bankers presumably would be less swayed by local or personal considerations in the granting or refusing of loans. On the other hand this argument has been reversed to favor unit banks, on the grounds that local bankers are more familiar with local conditions and borrowers, and that branch managers might be transferred from place to place too often to allow them to become sufficiently familiar with local conditions. At any rate, the history of bank failures in this country indicates that many failures have resulted in the past from local business conditions, and that a banking system wherein banks are less dependent upon local business conditions might have a better survival record. It should be remembered, of course, that the largest banks in the country are not local banks, as they draw business from all over the country. The customers of the large banks in New York and Chicago, for example, represent many sections and industries. There is still the great majority of small unit banks, however, of which this is not true.

Extent of Branch Banking

The number of branch banks in the United States is probably larger than is generally recognized. Approximately 10% of the banks

⁸ The only bank failure in Canada during the 1920's followed fraudulent practices of bank officials.

in the country are parts of branch *systems* or other types of multiple office operation, discussed below. Many of the branches, however, are merely additional offices located near the parent bank. It can be seen from Table 44 that very few national banks operated branches prior to the Federal Reserve System, and that state banks do so much more commonly today. However, in 1945 the 309 national banks with branches operated nearly as many as did the state banks with branches. The five national banks with branches in 1900 had one branch each.

TABLE 44

NUMBER OF COMMERCIAL BANKS OPERATING
BRANCHES, AND NUMBER OF BRANCHES,
1900-1945

Year	Number of Banks			Number of Branches		
	Total	National	State	Total	National	State
1900	87	5	82	119	5	114
1910	292	9	283	548	12	536
1920	530	21	509	1,281	63	1,218
1930	751	166	585	3,522	1,042	2,480
1940	954	200	754	3,525	1,539	1,986
1945	1,122	309	813	3,947	1,811	2,136

Source: *Banking and Monetary Statistics*, p. 297, and *Federal Reserve Bulletin*, June, 1946, p. 673.

California is the leading branch-banking state, with nearly 900 branches in 1945. Tables 45 and 46 are constructed to illustrate the number of branches in various regions of the country and the permissible distribution of these branches; that is, whether statewide or more restricted. Branches are also common in New York State, but seldom are they further from the home office than the next (contiguous) county; there was only one such branch in 1941. In California, nearly half of the 891 branches in 1945 were located in noncontiguous counties.

It appears from Table 46 that out of the 3,849 branches (exclusive of 241 offices located at military reservations included in the preceding table) operated by banks in 1945, only 686 were located further from the parent banks than the next county. Even these 686 branches, of course, were located in the same state as their home

offices. Over 1,700 of the branches were merely extra offices in the same city as the parent. As such, they doubtless contributed to the convenience of the services offered, but they hardly provided much diversification of deposits or assets. It follows from these figures that branch banking, as it is known in foreign banking systems, hardly exists in the United States.

TABLE 45
BRANCH BANKING BY REGIONS,
1945

Area	No. of Banks with Branches	No. of Branches
United States	1,227 ¹	4,090 ²
New England	93	323
Middle Atlantic	223	999
East North Central	234	584
West North Central	169	241
South Atlantic	171	468
East South Central	76	172
West South Central	72	107
Mountain	34	120
Pacific	50	1,076

¹ Includes 105 savings banks.

² Includes 241 branches established at military reservations.

Source: *Federal Reserve Bulletin*, June, 1946, pp. 672-73.

TABLE 46
NUMBER AND LOCATION OF BRANCHES,
1945 .

Area	Home Office City	Home Office County	Con- tiguous Counties	Noncon- tiguous Counties
United States	1,728	927	508	686
New England	142	116	52	5
Middle Atlantic	818	119	30	3
East North Central	290	228	40	11
West North Central	8	153	61	11
South Atlantic	142	89	107	71
East South Central	49	62	25	22
West South Central	24	43	7	2
Mountain	3	19	39	43
Pacific	252	98	147	518

Source: *Federal Reserve Bulletin*, June, 1946, p. 673.

There remains to be considered briefly what role branches do play in this limited branch-banking system. Some figures for member banks only and their branches are available, although they are not comparable to the figures for all banks used above. It would appear from these figures (Table 47) that about 20% of the real-estate loans of member banks were made by branches, and that in this respect branches in cities other than the parent bank provided twice as many loans as did home office city branches. Branches also made about 13% of the other loans of member banks. Similarly, they held about 13% of the demand deposits. However, it is apparent that they held over a quarter of the time deposits. This is one of the conveniences of branch banks, their location outside business areas where time depositors can easily make their deposits. The banks thus acquire funds that to some extent might stay outside the banking system.

TABLE 47

BALANCE SHEET ITEMS, ALL MEMBER BANKS
AND BRANCHES OF MEMBER BANKS,
JUNE 30, 1940

(millions of dollars)

Item	All Member Banks	Member Banks' Branches		
		Total	Head Office	
			City	Other
Real-estate loans	3,069	652	211	441
Other loans	10,900	1,408	856	552
Demand deposits	39,659	5,018	3,842	1,176
Time deposits	12,070	3,129	1,865	1,264
Number, banks or branches ..	6,398	2,285	1,250	1,035

Source: *Banking and Monetary Statistics*, p. 310.

Chain and Group Banking

As these names imply, they cover independently incorporated banks that are operated by one device or another as groups. Chain banking refers to banks that are held together by the ownership of their common stock by the same person or group of individuals. All of the stock need not be so owned, of course, as long as there is enough for control. Group banking refers to the ownership of stock of several banks by a holding company, or other device such as a trust or association.

Chain Banking

Chains of banks are much less numerous and important than group banking organizations. They are related by common ownership by individuals, and the capital available to build chains of banks is less than that available to incorporated holding companies. Furthermore, some of the chains that came into prominence during the 1920's had high failure rates and even the survivors fell into public disfavor and legislative restrictions. A chain may consist merely of a few small banks controlled by a family, or it may consist of many banks "strung together" by a promoter building up a system to sell. The Caldwell chain in Tennessee was involved in scandals concerning the depositing of state funds; the failure of several banks in the chain resulted in losses to the state. Other failures that focused attention on chains were the A. B. Banks chain in Arkansas, the Wingfield chain in Nevada, and the Witham chain in Georgia.

Chains have usually appeared where branch banking is prohibited. Chains are more expensive than branches, since each bank maintains its identity, its directors, officers, and employees. Presumably some of the banks established or taken over by chain organizations would have been made into branches, if their services had been required and large banks had been permitted to operate them. One of the main criticisms of the chain type of organization has arisen against chains involving both state and national banks or banks under the jurisdiction of more than one state. Such chains have been able to avoid complete examination and supervision, since assets could be traded among the banks in anticipation of examination of some of them. It would be possible for the best assets to be shifted to the various banks ahead of the examiners, unless "surprise" examinations should happen to catch a bank loaded up with the poorest assets.

Group Banking

A banking *group* may be controlled by a bank which owns stock in other banks or by a separate nonbanking corporation established for the purpose. Such holding companies as the latter are sometimes referred to as *bancorporations*, a term that was made popular by the establishment of several of these holding companies after 1920. Most states have no laws prohibiting or regulating the ownership of bank

stocks by holding companies although most of them do prohibit or restrict such ownership by banks; hence the tendency for separate corporations to be established. In addition, the nonbanking holding company was not originally subject to any banking laws, since it was not a bank.

Some of the disadvantages of chain banking naturally apply to group banking, such as the lack of economy (as compared to branches) and the possibility of "swapping" assets for purposes of examinations. Advantages exist, also, in that the holding company is often in a position to improve the operations of the individual banks. From its dividends on the banks' stocks and its fees for supervisory services, the holding company may provide a central statistical service, investment advice or policy, wholesale purchase of securities for the banks, and a central credit bureau to analyze the credit ratings of borrowers. Especially during the period of growth of group banking (1925-1930) it was felt that groups had certain advantages over branch banking. Group banking provided the advantages of central coordination but maintained the advantages of local banking organizations, names and goodwill. Some groups, however, were formed on the assumption that branch banking was due to develop in the United States and that the group banks could easily be converted to branches when legislation permitted.

The fact that group banking made evasion of banking laws possible and that some groups were formed for promotional profits, with no benefits to the banks themselves, led the Federal reserve officials to attempt to regulate the practice. Until the Banking Act of 1933 they had no legislative tools with which to work, but it was possible by regulation to prevent member banks from acquiring sufficient stock in other banks to control them. After 1928, the Board prohibited state member banks from acquiring any stock interest in other banks. The Banking Act of 1933 requires holding companies owning shares of member banks to obtain voting permits before they may exercise the voting privileges of such shares. The control of member banks that are members of groups is thus lost unless the holding company obtains a voting permit from the Board of Governors. In order to obtain such a permit, the company must agree to submit to an examination of its affairs at the same time as the member bank is examined, to allow examination of the other banks controlled by it, to build up

a reserve to be invested in marketable securities, to publish statements of condition, and to abide by certain other similar provisions. Before granting the permit the Board is supposed to satisfy itself that the financial condition of the company, the "general character" of its management, and the probable effect on the member bank are all favorable.

Extent of Group Banking

Since holding companies until fairly recently were not subject to regulation under the banking laws, little information on them was gathered during their early history. It is likely that groups were first formed—at least the first after 1920—by the owners of chain banks who transferred their personal holdings of bank stocks to holding companies. The "big business" era of the 1920's witnessed the formation of several groups, particularly when the securities of the top holding companies had a ready market during 1927–1929. At the end of 1931 there were 97 group systems, including 978 banks. These 978 banks also had 1,219 branches.⁴ Their total loans and investments totaled nearly \$9,000,000,000. During the 1930's group banking suffered a decline through liquidations and mergers, and in addition some of the group banks became branches. By the end of 1939 the number of groups was reduced to 41, with 427 banks having loans and investments of \$5,400,000,000. Twenty of these groups held over \$4,700,000,000 of loans and investments. Of the 427 banks, 60 had branches, numbering 869, and nearly all (831) of these branches belonged to banks in the twenty groups just mentioned.⁵

Like chain banking, group banking has developed in states where branch banking does not exist, but it also appears where branch banking is permitted. Group banking has the advantage, when utilized, that groups may spread over state lines, while branches must be located within the state, at most. Where branch banking is permitted, groups are found in which the banks operate numerous branches, as on the West Coast. Banking offices operated by group banks constituted 57% of all banks in Nevada in 1939, 49% in California, 33% in Oregon, and 10% in Washington.⁶

⁴ *Banking Studies*, pp. 135–36.

⁵ *Ibid.*, p. 136.

⁶ *Banking and Monetary Statistics*, p. 312.

TABLE 48

TEN LARGEST HOLDING COMPANY GROUPS,
1929

Group	No. of Banks	Loans and Investments ¹
Transamerica Corporation, N.Y.	18	\$1,418.3
First National-Peoples Wayne Co., Detroit	21	705.0
First National-Old Colony Corp., Boston	20	568.3
Marine Midland Corp., Buffalo	19	425.4
Guardian Detroit-Union, Detroit	35	403.9
Northwest Bancorporation, Minneapolis	92	339.7
First Bank Stock Corp., Minneapolis	78	339.2
First Wisconsin Nat'l Bank, Milwaukee	18	168.4
Anglo-National Corp., San Francisco	17	146.1
First Securities Corp., Syracuse, N.Y.	14	115.5

¹ Millions of dollars.Source: Committee on Banking and Currency, House of Representatives, 71st Congress, 2d Session, *Hearings on Branch, Chain and Group Banking*, p. 455.

Other Forms of Consolidation

Banks have grown or joined together in several other ways than those described above. Group banking, just described, is merely the application of the familiar holding company device to banks. Other types of concentration, such as interlocking directorates, have also appeared. Interlocking directorates among member banks or between member banks and nonmember banks were banned by the Clayton Act, but the restrictions were lifted in the Banking Act of 1935 except for banks in the same or contiguous cities or counties, and even then they do not apply when a majority of stock in more than one bank is owned by the same stockholders. Besides such legal devices as the holding company and interlocking directorates, there have been consolidations and mergers in banking in the same manner as in other forms of business. There have also been banking *affiliates*, so called because they are nonbank corporations affiliated with banks.

Consolidations and Mergers

Any successful bank in a growing community will expand as it obtains more and more deposits and as a portion of its earnings are maintained as stockholders' equity. The process of concentration in banking has been accelerated, however, by mergers and consolida-

tions among existing banks.⁷ As with the other forms described above, some consolidations were the result of the drive for bigness during the 1920's. Especially since 1933, however, consolidations have taken place at the instance of the FDIC, which have been designed to eliminate weak banks by merging them with others. Even during the 1920's, banks that were on the verge of liquidation sometimes escaped failure by consolidation with other banks. In such a case the absorbing bank assumes the liabilities of the absorbed bank and takes over the assets. If the absorbed bank has any stockholders' equity, its stockholders may be paid in cash or stock of the absorbing bank.

TABLE 49

CONSOLIDATIONS AND ABSORPTIONS,
ALL INCORPORATED COMMERCIAL BANKS,
1921-1941

Period	Number
1921-1925	1,764
1926-1930	2,968
1931-1935	1,944
1936-1940	677
1941-1945	388

Source: *Banking and Monetary Statistics*, p. 52, and *Federal Reserve Bulletins*.

It should be understood that a consolidation or absorption may be part of the growth of a branch-banking system or group system, rather than a separate phenomenon. For instance, in California, where branches are common, the state banking authorities have frowned upon the establishment of new branch banks in communities which were adequately served by existing banks, but they have welcomed the absorption of small unit banks and their conversion into branches.⁸

The growth of large-scale business in the United States often has virtually required the growth of large-scale banking. The legal restriction against lending more than 10% of capital and surplus to

⁷ "Merger" and "consolidation" are used synonymously here, although technically in a merger of two corporations, one loses its identity and the other continues; in a consolidation, both corporations dissolve and a new (third) one is created to succeed them.

⁸ R. B. Westerfield, *Money, Credit and Banking*, New York, Ronald Press Company, 1938, p. 934.

one borrowing interest has required banks to expand in order not to lose the business of their largest customers. When consolidations take place among existing banks their combined capital and surplus is increased, unless one bank is so near failure that it has no stockholders' equity. Some consolidations have taken place for a somewhat different reason: to acquire profitable business already developed by a competing bank. For example, one bank might arrange to absorb another bank with a successful trust or mortgage loan department, rather than to build up such department in competition with the other.

Affiliates

Still another type of banking growth, the use of affiliates, has at times been of sufficient importance to merit attention. Affiliates require mention in this chapter, particularly, as the investment-banking functions of commercial banks are not separately treated. Banks have affiliated with other corporations for many purposes, but usually in order to participate in some activity that banks as such were forbidden to undertake. Prior to the Federal Reserve System, state banking laws often allowed state banks to engage in certain types of business from which national banks were barred. For example, state banks, but not national banks, could make mortgage loans, and they could act as trust companies, also. To mention another difference, national banks had to keep the same reserves for time deposits (if they had any) as for demand deposits. There are still survivors of "twin" corporations that were formed to circumvent these restrictions. A national bank would establish a separate corporation as a state bank or trust company, which would be owned by the same stockholders who owned the national bank.⁹ After 1913, however, there was less need for this circumvention because reserve requirements of member banks were greatly reduced for time deposits, and under certain restrictions, national and other member banks could make real-estate loans and carry on a trust business.

The 1920's saw a considerable growth of *investment affiliates*, similar to those described above but established to act as investment banks. An investment bank, primarily, is a bank that agrees to float

⁹ This example, involving two banks, is one of chain banking. The affiliates, however, need not be banks.

new issues of securities for corporations (or governments), at certain guaranteed prices. If the investment bank, often in syndicates with other investment banks, is successful in floating the securities at higher than the guaranteed prices, it profits; otherwise, it takes a loss.

The outstanding example of a security affiliate, a model followed more or less closely during the 1920's by other large banks, was the First National Corporation, the affiliate of the First National Bank of New York City. Ownership of a share of stock of the bank automatically carried with it ownership of a share of the Corporation, so that in all respects except the legal fiction of corporate entity they were one and the same business.¹⁰ The severe losses that many people suffered when security prices fell in the early 1930's, the similar losses by banks, and the general public criticism of bankers, led to legislation in 1933 which required the complete separation of commercial and investment banks. It was argued that (1) the funds of the commercial bank were lent to the investment affiliate, so that bank funds were tied up in a risky business, (2) commercial bank funds were lent, similarly, to enterprises in which the affiliate owned stock, (3) the officers were likely to "unload" securities from the investment affiliate onto the bank if they could not sell them on the market, thus diluting the quality of the bank's investments, and (4) the commercial banker was unable to give his customers unbiased investment advice if his investment affiliate were interested in selling certain new issues. One casualty of the required separation was the famous banking house of J. P. Morgan, probably the most widely known investment banking house, which also did a private commercial banking business. To the

¹⁰ The Chase National Bank had an affiliate, the Chase Securities Corporation, whose stock was inseparably joined with that of the Chase National Bank. The Corporation underwrote and sold securities at wholesale, later selling at retail as well. Sometimes the Chase Bank absorbed other banks which had affiliates, and these were merged with the Corporation. The capital, surplus, and undivided profits of the Corporation were \$108,000,000 in 1930 and only \$14,000,000 in 1933, after losses. The National City Bank similarly had an affiliate, the National City Co. Its stock was trustee for the benefit of the stockholders of the National City Bank (J. D. Magee, *Collapse and Recovery*, New York, Harper and Brothers, 1934, pp. 127-128.) The Attorney General of the United States said of the National City Co., "(It) is not simply to control banks, but it may engage in any business whatever, even that forbidden by its charter, if despite its charter prohibition as to certain kinds of business, it may invest in the stocks of companies conducting such business. The other enterprises in which the company is engaged may stand in need of credit and of funds, and it is too much to expect that the company's banks will deal simply as banks, equitably and impartially, as between its own subsidiaries (and those) with whom it is not affiliated."

public's surprise, J. P. Morgan and Co. elected to carry on the commercial banking business, and certain partners and employees separated from the old company and set up Morgan, Stanley, and Co., to carry on an investment banking business.

Banking affiliates were not necessarily restricted to those doing investment banking. The famous failure of the Bank of the United States, which had no connection with the United States government, revealed that it had set up several affiliates whereby bank funds were used in all sorts of enterprises in which banks as such could not engage. Loans were made to affiliated corporations for investment in apartment houses and other real-estate ventures, to mention only one field barred to the bank's direct participation. When these business ventures failed they carried the bank to failure and the reverberations had a great deal to do with the "reform" legislation of 1933.

XXIII

DEPOSIT INSURANCE

PERIODIC WAVES of bank failures in the United States from time to time have stimulated interest in plans for insurance or guarantee of deposits. It will be remembered that the Safety-Fund System, established in New York State in 1829 through assessments on the banks, was to be used to reimburse depositors and noteholders for losses sustained when banks failed. In that case, the fund proved inadequate to cover both depositors and noteholders, and in 1837 coverage was restricted to noteholders only. The agrarian distress of the latter part of the nineteenth century led to considerable agitation for similar plans in several states, but the bank failures of 1907 gave rise to several experiments with deposit insurance.

Nature of Deposit Insurance

It should be remembered that deposit insurance or a deposit guarantee by some authority is designed to protect the creditors—the depositors—of banks, and not the banks themselves or their stockholders. Although this statement must be qualified later, deposit insurance plans are not designed primarily to prevent banks from failing or to cover the losses of the owners of failed banks, but to cover

losses of the depositors.¹ It should also be remembered that the failure of a bank does not cause depositors to lose their entire deposits. The liquidation of the remaining assets of the bank may make possible the payment of a large part of the deposits.

Deposit insurance has been advocated on several grounds. One simple argument, to the effect that losses to depositors are painful and should be prevented, ordinarily is based on the notion that deposits are mostly savings deposits. Another, starting from the premise that savings deposits should be protected, proceeds to the conclusion that all deposits should be protected. Deposit insurance sometimes is defended on the grounds that demand deposits make up most of a community's circulating money and that the trade and business of the community suffer when these are "frozen" in an insolvent bank. Pay rolls and trade debts cannot be met, purchases cannot be made, and business stagnation is likely to set in, especially if a long time elapses before depositors receive their funds from the liquidation. Another argument in favor of deposit insurance has to do with bank failures which are caused by runs. As these runs are likely to be more common in periods of declining or depressed business, such failures contribute to the further decline of purchasing power. It is argued that if depositors need not fear the loss of their funds even if their banks fail, runs will not take place and some failures may be avoided. Some of the opposing arguments rest upon the failures of state plans of deposit insurance, so they will be postponed until after a survey of the state experiences.

While some of the more naïve proponents of deposit insurance appear to believe that losses are avoided through insurance, it is obvious that they are merely shifted. If depositors do not "take" their losses, someone else must bear them. Deposit insurance differs from most types of insurance, and the problem of who bears the cost is somewhat complicated. In the case of life insurance, for example, the number of deaths that will occur at different ages in a large sample of the population is predictable. Premiums therefore can be calculated and graduated according to age. The policyholder who dies after making one or two payments "benefits" in that the insurance company pays his heirs more than he paid the company. The company can do this be-

¹ In this connection, it will be recalled that commercial banks no longer have note liabilities.

cause the other policyholders did not die. Furthermore, as the longer-lived policyholders eventually die off, the premiums of new policyholders are available to meet the required payments; also a reserve has been accumulated to cover unusual payments. Thus, the survivors are insured as well as the nonsurvivors. In deposit insurance this may not be the case. In the first place, as bank failures and the extent of loss to depositors depend upon fluctuating business conditions, they cannot be accurately predicted from past experience. One can calculate after the event what premiums banks would have had to pay in the past to cover losses, but this calculation may not afford an accurate prediction of necessary premiums in the future. In the second place, a large number of losses are likely to occur at the same time. Hence, a fund may be depleted by the failure of several insured banks, no protection being left for the survivors. In fact, the fund may be inadequate even to meet actual losses. In such a case the cost of the insurance is thrown on the survivors rather than being divided among all of the insured.

Experience of State Plans

Altogether, the public favor in which deposit insurance was held after 1907 led to the adoption of plans in eight states. In the main, these were midwestern states where bank failures had been especially burdensome. The experiences were sufficiently similar that it is not necessary to examine them all. We shall survey the first plan established, that of Oklahoma, and then mention some of the improvements that were made elsewhere on the basis of Oklahoma experience.

The Oklahoma Plan

Oklahoma was admitted to statehood in 1907, and the second act of its new legislature provided a system of deposit insurance, to take effect in early 1908. This act contained many weaknesses as a result of the hasty action taken to satisfy the popular demand for deposit insurance.

The plan covered Oklahoma's state banks; membership in the plan was open to national banks, but the Comptroller of the Currency ruled that they could not enter. The plan provided that, when an insured bank should default, the depositors were to be paid at once; that is, it did not provide merely for losses after liquidation. Hence,

the plan required a fund from which to pay depositors, the fund being replenished (as far as possible) by liquidation of the banks' assets. The fund originally was to be built up by assessments on the state banks and trust companies of 1% of their deposits. Special assessments could be made to replenish the fund when depleted. As these special assessments were a potential danger to surviving banks, they succeeded in having the law changed. The new provisions required that a fund of 5% of deposits be built up by annual assessments of $\frac{1}{2}$ %, with a limit on special assessments of 2% a year. Still further to protect surviving banks from onerous assessments, special assessments were abolished in 1916. Eventually the regular assessments were reduced to $\frac{1}{8}$ % per year. When the fund was depleted by payments to depositors, the latter were given certificates bearing 6% interest which were redeemed when the regular assessments had rebuilt the fund.

The fund was largely invested in state obligations. After a few years of operation the banks were allowed to pay their assessments by checks which were not cashed until needed; in the meantime the banks deposited collateral with the State Banking Board to secure the checks.

Eventually bank failures caused losses sufficient to eat up the fund, and assessments became patently insufficient to restore it, unless they should be raised to levels too heavy for surviving banks to bear. There were several reasons why failure resulted. Among the most important may be mentioned the absence of national banks in the plan. The state banks had not been subjected to efficient examination and supervision prior to 1907, and the situation was not greatly improved in the early days of statehood. Insurance was not uniform throughout the state, as state or national banks respectively dominated one section or another. Bank assets were not conservative, as oil and real-estate booms led to inflated loans. The failure rate of the covered banks for the period of the plan (1908-1923) was about 35%, compared to about 7% for the national banks in Oklahoma during the same period. The burden placed on surviving banks was therefore heavy, amounting to an annual average of 3% of their capital.² For many banks this meant that a large part of their earn-

² R. B. Westerfield, *Money, Credit and Banking*, New York, Ronald Press, 1938, p. 966.

ings was taken by these assessments. Many of the larger and sounder banks converted to national banks in order to escape the system. As appears in Table 50, below, banks paid assessments amounting to \$3,700,000, but a deficit of \$7,500,000 existed at the end of the plan. The Banking Board expected to be able to cover the deficit from the assets of the failed banks, however.

TABLE 50
EXPERIENCE WITH STATE PLANS OF
DEPOSIT INSURANCE
(dollar figures in thousands)

State	Begun	Ended	Assess- ments Paid	Deficit at End	Failure Rate of Insured Banks	Failure Rate of Nat'l Banks	Period ¹
Oklahoma	1908	1923	\$ 3,700	\$ 7,500	35.6%	7.6%	1908-24
Nebraska	1909	1930	17,700	22,000	38.4	19.6	1921-30
Kansas	1909	1929	2,685	7,175	5.9	1.5	1922-24
Texas	1910	1927	....	15,000 ²	...	...	.....
Mississippi	1915	1930	....	5,000	16.0	10.0	1920-30
South Dakota	1916	1927	....	36,769 ³	42.0	33.5	1924-27
North Dakota	1917	1929	2,000	14,000	50.0	35.0	1919-29
Washington	1917	1929	825	1,400	⁴	...	.....

¹ The last column is the period for which comparative failure rates are available.

² For period 1920-1925.

³ As of June 30, 1930.

⁴ Plan broke down when one large bank failed in 1921 and others withdrew, but law was not repealed until 1929.

Source: American Bankers Association, *The Guaranty of Bank Deposits*, 1933; Association of Reserve City Bankers, *Bulletin No. 3*, 1933, p. 32.

Other State Plans

The eight states that experimented with deposit insurance are listed in Table 50. Although these plans were all abandoned by the end of 1930, some of them were more successful than that of Oklahoma, as they benefited from the Oklahoma experience. In some no attempt was made to build up a fund large enough to pay depositors of defaulting banks immediately, but merely to pay any eventual losses. This method, of course, fails to accomplish one aim of deposit insurance, that of preventing the freezing of funds in defaulting

banks. The plans also included limitation of the interest rates which insured banks might pay for deposits, in order to minimize competition and a trend to speculative investments. (This was one of the few strong points of the Oklahoma law.) Most of the plans provided for strict examination and supervision of the member banks prior to their admission, especially where the plans were voluntary. Capital requirements also appeared, as, for example, the requirement that only banks with capital and surplus amounting to 10% or more of deposits could obtain insurance. In addition, state supervisory authorities were given power to order bank managements to refrain from unsound policies and to expel uncooperative banks from the insurance funds.

Failure of State Plans

In spite of these improvements, none of the plans survived more than a few years. The reasons for their lack of success are summarized as follows:³

1. Depositors patronized unsound and inefficient banks in the belief that insurance made their funds safe; too many such banks thus were allowed to operate, and eventually they raised the failure rates.
2. The fact that guaranteed banks had higher failure rates than others led to stiff assessments that surviving guaranteed banks could not afford.
3. The insured risks could not be calculated, and, since failures tended to concentrate in certain years, the strain was too great.
4. Supervision and examination of insured banks were generally weaker than those of other banks.

The conclusion of the American Bankers Association was that "These historical experiences show that the guaranty plan is inherently fallacious and based on erroneous premises and assumptions. It has proved to be one of those plausible, but deceptive, human plans that in actual application only serve to render worse the very evils they seek to cure."

The reasons for the high mortality rate of state banks in the states that tried deposit insurance have been summarized in Chapter XI, and need not be repeated here. It may be noted, however, that the

³ American Bankers Association, *The Guaranty of Bank Deposits*, 1933, and Association of Reserve City Bankers, *The Guaranty of Bank Deposits*, *Bulletin No. 3*, 1933.

fact that failure rates were high in those states led to public demand for deposit insurance at the same time that it militated against success of the plans.

Federal Deposit Insurance

In spite of the dismal record of state plans for deposit insurance, the heavy losses suffered by bank depositors between 1929 and 1933 led to very strong public pressure for deposit insurance on a Federal scale. The record of state plans was convincing proof to many that a Federal plan could not succeed, but at the same time others hoped that the record of the past might reveal weaknesses, the correction of which might allow success.

The Federal Deposit Insurance Corporation

The Banking Act of 1933 contained a rather hastily drawn plan for deposit insurance designed to cover Federal reserve member banks and other acceptable banks for a temporary period, after which a permanent plan was to go into effect (on July 1, 1934). The *permanent* plan did not go into effect, however, because of opposition by the banking fraternity to certain inequities contained in it, and the temporary plan was continued until a more acceptable system was established in the Banking Act of 1935. As the Banking Act of 1933 has only historical interest now, no thorough analysis of the insurance provisions will be made. It was important, however, that Congress required the newly established Federal Deposit Insurance Corporation to accept for insurance all banks certified to be solvent. No other requirements of liquidity or minimum percentage of capital and surplus were made. The FDIC accepted 99% of the applicants on these standards, and these banks automatically were included in the permanent system established two years later.

The FDIC was established with \$150,000,000 of capital funds subscribed by the Treasury. Each Federal reserve bank was required to purchase stock in the FDIC equal to half its capital and surplus; these purchases amounted to another \$139,000,000. Each insured bank was to pay an assessment of $\frac{1}{4}\%$ of its deposits eligible for insurance, with insurance covering each deposit up to \$2,500 under the temporary plan. Control of the FDIC was given to three directors, one of whom was the Comptroller of the Currency.

The original permanent plan had several features that were strongly opposed by the banks. Under this plan the banks would have been liable for unlimited assessments, after purchasing stock in the FDIC. "In effect, it compels the banks which have survived the depression . . . to sign a blank check for all losses that may occur in the future." ⁴ It would have provided complete coverage for deposits up to \$10,000, 75% coverage for amounts between \$10,000 and \$50,000, and 50% coverage for amounts above \$50,000. The revision in the Banking Act of 1935 provided that assessments would be limited to $\frac{1}{12}$ % per year (payable semi-annually), and that coverage would be complete for deposits up to \$5,000, with no coverage above that figure. In addition, the complaint of the mutual savings banks that their failure record entitled them to lower assessments was recognized, in that a separate fund was established and the Directors of the FDIC could establish assessment rates.

Opposition to Deposit Insurance

The introduction of deposit insurance on a national scale met strong opposition, which stemmed mainly from the experience with state plans. Influential bank management opposed deposit insurance because it feared the effect which such insurance would have on the quality of bank management. This attitude has been summarized excellently by Westerfield:

Probably the most telling argument brought against deposit guaranty is that it puts all bankers on the same level, making the deposits in new, inexperienced, reckless, or dishonest banks as safe as deposits in old, proved, conservative, and honest banks; removing all incentive for developing good-will and reputation for sound banking and for accumulation of substantial surpluses; making liberality in extension of loans and payment of interest on deposits the chief inducements to depositors; taxing good, competent, experienced, trained, and conservative bankers in order to pay the losses wrought by the incompetent, inexperienced, untrained, and reckless bankers; giving the unscrupulous and reckless banker the competitive advantage and thereby lowering the personnel of the banking world; stimulating the establishment of new, small, speculative banks since they are as safe as the old, well-established institutions; and making the public indifferent whether reckless and crooked bankers are punished or not.⁵

⁴ Association of Reserve City Bankers, *op. cit.*, p. 8.

⁵ R. B. Westerfield, *Money, Credit and Banking*, New York, Ronald Press, 1938, p. 980.

Other grounds for opposition to deposit insurance stemmed from the nature of the insurance. As explained above, "insurance" is a misnomer when applied to deposits, as the risk cannot be calculated in the sense of forecasting losses. The "insurance" therefore is likely to degenerate into coverage for the depositors of the first banks to fail and then to become inadequate, or else to become a system whereby the government guarantees depositors against loss, any necessary funds coming from tax revenues.

Other objections were based upon the particular plan worked out. As mentioned above, savings banks objected to the original plan because it did not recognize their superior safety record. The proposed plan was also attacked by large commercial bankers because of the apparent inequity in the assessments and coverage. When deposits were insured only up to \$2,500 in the temporary plan, banks paid assessments based upon their insured deposits. Under the proposed (present) plan, banks with many accounts in excess of the \$5,000 maximum paid assessments, based upon their total deposits, for insurance which their depositors did not enjoy. Small country banks with many small accounts were covered much more completely than were city banks. A large city bank, whose customers were mainly large business firms and other banks, might find that all of its deposits were in excess of \$2,500. The final adoption in 1935 of \$5,000 as the limit of insurance met some of this objection, but it became true that the larger banks paid most of the assessments and enjoyed the least proportionate protection for their depositors. In 1938 banks with deposits in excess of \$50,000,000 found only 26% of their deposits covered by the \$5,000 limitation, while banks with deposits of less than \$100,000 found about 95% of their deposits covered. In 1940 it was estimated that about 45% of all deposits of insured banks were insured.⁶

During the great expansion of deposits after 1940 the proportion of covered deposits declined. More and more of the business funds of the nation were in deposits exceeding \$5,000. By 1944, the FDIC was proposing legislation to expand insurance coverage to all deposits without limit, on the grounds that the freezing of funds by

⁶ W. H. Steiner and E. Shapiro, *Money and Banking*, New York, Henry Holt, 1941, p. 167.

bank failure in a community no longer was sufficiently offset by FDIC insurance payments which were limited to \$5,000.⁷

Criticisms Met by the Federal Deposit Insurance Corporation

The plan of insurance adopted in the Banking Act of 1935 represented attempts in various ways to meet the objections to deposit insurance. In the first place, it was contended that some of the objections were not sound; in the second place, the Federal plan was made to differ from state plans in certain important respects.

The argument that bank management suffers and depositors lose interest in the efficiency and safety of their banks when deposits are insured does not necessarily hold true. It should be remembered that, when a bank fails, stockholders lose their investment completely before any burden falls upon the FDIC. The owners and managers of banks should therefore be as reluctant to default as if there were no insurance, and just as anxious to provide the bank with safe assets.

It is probably true that few depositors, in choosing a bank, study the policies and annual statements of various banks. Most savings depositors and demand depositors with personal accounts probably are influenced in their choice more by the convenience of location than by any other factor. The reputation of a bank is likely to be taken into account, but that is not necessarily a true index of the safety of a bank. Large depositors, under the \$5,000 limitation, have virtually the same reason for choosing banking connections carefully as they would have without insurance. While deposits in excess of \$5,000 could be split into deposits at various banks, such a procedure is hardly practicable for the business corporation with hundreds of thousands of dollars of bank deposits. Furthermore, most depositors with business accounts choose their banks in accordance with their entire banking needs, particularly with reference to loans. Deposit insurance has little effect on the nature of these arrangements between bank and customer.

Certain features were embodied in the insurance plan to avoid the criticisms leveled at previous plans. Interest payments on demand deposits are abolished and interest payments on time deposits are made subject to regulation.⁸ Consequently, competition for deposits

⁷ *Annual Report*, 1944, p. 8.

⁸ Thus it may be argued that depositors are the ones who pay for the insurance.

through interest payments is eliminated, as well as the concomitant tendency to seek higher-paying assets. The objection that a wave of failures could create an unbearable burden of assessments for surviving banks is met by the limitation of assessments to $\frac{1}{12}\%$ of deposits per year, with no special assessments. The possibility that weak or reckless banks may cause failures sufficient to deplete the insurance fund is met by the supervision and regulatory powers of the FDIC. Insurance may be withdrawn from a bank that refuses to correct practices objected to by the FDIC. Such banks are still liable for assessments for a period after their suspension.

Operations of the Federal Deposit Insurance Corporation

When a bank defaults, an examination is made to determine whether the bank is solvent; if it is not, the FDIC is appointed receiver of the bank in the case of national banks. Furthermore, most state laws now provide for the appointment of the FDIC as receiver for insured banks. There are two ways in which the Corporation may pay depositors their insured accounts. In the first method the FDIC makes funds available so that depositors may close out their accounts at the closed bank by withdrawing cash or checking out their deposit to another bank. In the second method, if banking facilities would otherwise be lacking in the community, the FDIC may form a new national banking corporation without capital stock and operate it temporarily. It is hoped in such a case that a new bank will be formed in the community, which can assume the deposits and take over the assets of the temporary bank. In the latter case the function of the FDIC is to make up whatever deficiency of assets there may be. When the deficiency is made up an absorption may take place whereby the absorbing bank will obtain assets equal to the deposit liabilities which it assumes.

When the Corporation acts as receiver of a closed bank, it attempts of course to pay the various depositors from the proceeds of the liquidation. The insured deposits may be made available immediately, but the Corporation endeavors to pay the others as soon as possible and also to recoup its own contribution, out of the liquidation.⁹ By the end of 1944, 245 banks had been placed in receiver-

⁹ Some deposits may be secured by pledge of specific assets. State and municipal deposits are often made with such arrangements. Such depositors are entitled to the

ship during the eleven years of FDIC operation. These banks had deposits of approximately \$110,000,000, of which 96% had been paid to depositors. Most of the remaining 4% was owed on uninsured accounts and was still tied up in liquidations which postponed payment. These figures are summarized in Table 51, which shows the relative insurance status of various amounts of deposits.

TABLE 51
PAYMENTS TO DEPOSITORS OF INSURED
FAILED BANKS BY THE FDIC AND
OTHER RECEIVERS,
1934-1944
 (millions of dollars)

Status of Deposits	Amount	Total Paid by Dec. 31, 1944
Deposits (total)	109.6	105.3
Insured	87.1	86.9
Secured, etc.	11.3	11.2
In excess of \$5,000	9.7	6.3
Other uninsured .....	.9	.7
Unclaimed .....	.4	...

Source: FDIC, *Annual Report*, 1944, p. 16.

Note: "Secured, etc." refers to deposits secured by specific assets or otherwise preferred, or deposits subject to offset against amounts owed to the banks by depositors. Deposits included in those "In excess of \$5,000" were not otherwise protected. "Other uninsured" deposits include those like the deposits not originally eligible for insurance. The receiver sometimes pays the "Unclaimed" deposits by putting the funds in trust; state laws vary as to their final disposition.

Even more important than these *remedial* payments by the FDIC are its attempts to prevent failures. A merger of a weak or insolvent bank may be arranged by the FDIC in anticipation of its failure. The FDIC lacks authority to force such a merger upon the directors of a bank, but the advantages of merging before failure actually occurs often are sufficiently apparent to facilitate the arrangement. In such a case, the FDIC is authorized to make loans or to purchase assets from the bank in order to put it into condition for the merger, where "such action will reduce the risk or avert a threatened loss to pledged assets up to the amount of their deposits; if the assets prove insufficient, the depositors join the other uninsured depositors "in line" for whatever fraction of deposits is available from liquidation.

the Corporation." During the eleven years ending in 1944, 152 banks had been merged with such financial aid from the FDIC. The deposits of these banks, approximately \$390,000,000, exceeded those of the 245 banks which had been placed in receivership. The FDIC provided \$172,717,000 to facilitate these mergers, of which most was recovered or repaid; the estimated loss was about \$20,000,000.¹⁰ The justification, of course, is that the loss to the Corporation presumably would have been greater if the banks had been allowed to fail. In actual practice in the case of these *preventive* mergers, the Corporation usually purchases the questionable assets of the merged bank at a price which insures the merging bank that the acquired assets will equal the deposit liabilities which are being assumed. If the Corporation eventually disposes of the assets without loss, in the computation of which liquidation costs and 4% interest on its loaned funds are included, any excess is refunded to the stockholders of the merged bank. The merged bank may be operated as a branch bank or the accounts may be transferred to the merging bank.

Thus during the first eleven years of its existence the Corporation advanced approximately \$260,000,000, of which about \$87,000,000 went to holders of insured deposits in failed banks and \$172,000,000 was used to facilitate mergers. Of this amount over 75% had been returned to the insurance fund during the period. Thus all losses of the Corporation had been covered by income from its investments, and the assessments had been allowed to build up the surplus of the Corporation. The financial operations of the Corporation for the eleven-year period are summarized in Table 52.

This highly successful record again raises the question of whether deposit insurance may not be successful. By the end of 1944¹¹ the FDIC had capital and surplus of \$804,300,000, which was only .60% of the deposits in insured banks. This ratio was reduced considerably by the wartime increase in deposits, as mentioned above. The ratio in 1938 was .83%, when the Corporation's capital and surplus were only \$420,500,000. Between these two years deposits in insured banks (including insured and uninsured deposits) rose from \$50,800,000,000 to \$134,600,000,000. The insured portion of deposits rose from \$15,000,000,000 in 1934 to \$33,000,000,000 in 1942, and

¹⁰ FDIC, *Annual Report*, 1944, p. 15.

¹¹ 1944 is used in these statistics because of the cessation of bank failures in 1945.

the capital and surplus of the Corporation remained at about 2% of this figure.¹² During such a period bank failures naturally remain at a low figure. The earlier part of the period of FDIC operation includes the years of recovery from the depression of the 1930's and during such a period too bank failures would be expected to remain low. It is true that between 1934 and 1940 many banks failed; they had been weakened by the depression and had failed to recover.¹³ However, the period of recovery and the period of war have not provided any severe test of the insurance plan.

TABLE 52

INCOME AND EXPENSE OF THE FEDERAL
DEPOSIT INSURANCE CORPORATION,
1934-1944
(millions of dollars)

Item	Amount
Assessments	470.0
Investment income	122.1
Total income	592.1
Insurance losses	39.3
Administrative expense	37.7
Total expenses	77.0
Added to surplus	515.1

Source. FDIC, *Annual Report*, 1944, p. 28.

Prospects for long-run success of the insurance system lie mainly in the hope that improvements in the banking structure such as those that have taken place since 1933 will eliminate future waves of widespread failures. The FDIC itself has attempted to eliminate small and weak banks through mergers. Federal and state officials, as a rule, are more strict than in the past in granting new charters. Some improvement is essential, because the assessment rate of $\frac{1}{12}\%$ per year is only half of that which would have been necessary to operate a comparable plan for the period from the end of the Civil War to 1934. In 1942 the FDIC admitted that its future success depended more upon the prevention of failures than upon its ability to meet widespread losses.

¹² A table showing the number of bank failures appears on page 161.

¹³ FDIC, *Annual Report*, 1942, p. 25.

The present (assessment) rate assumes that the reforms and improvements in our banking system sought by banking legislation over the past decade have been achieved and tested, that bank management and bank supervision are superior to those of former years, and that this country will never again have a banking crisis.¹⁴

After all, public interest will be better served by such prevention, if it is successful, than by the coverage of losses.

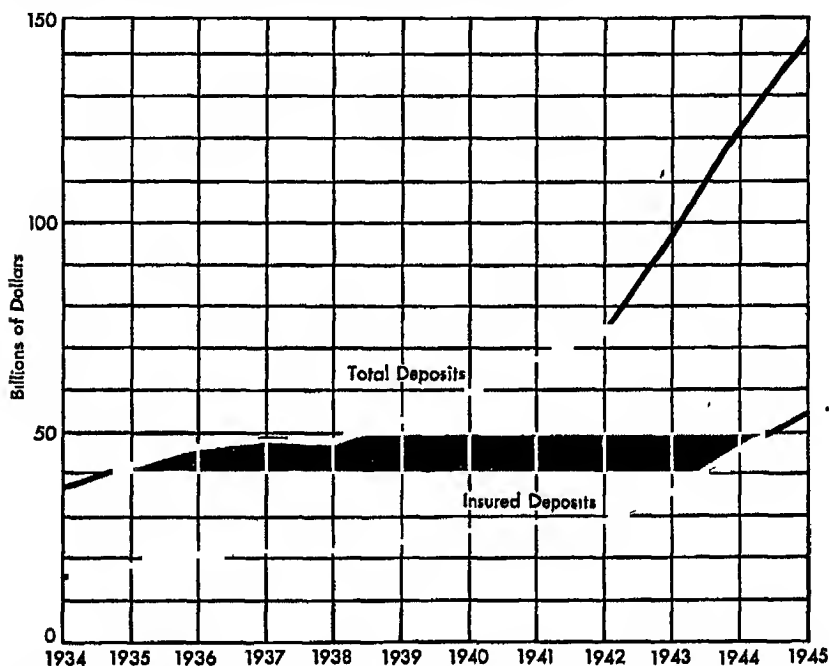


FIG. 28.—Increase in Deposits in Insured Banks and in Insured Deposits under the \$5,000 Limitation, 1934-1945. (FDIC data.)

Insurance of Savings Bank Deposits

The fact that the savings banks of several states refrained from joining the Federal deposit insurance plan and established insurance funds of their own has been mentioned in Chapter XIX, where the fund operated in New York State by the Savings Banks Trust Company was described. It was also mentioned that in 1943 the savings banks in New York State, with about half of all mutual savings bank

¹⁴ *Annual Report*, 1942, p. 8.

deposits in the country, turned to the Federal plan. At about the same time, the banks in Connecticut adopted a state plan. Some of the reasons for these divergent actions will be discussed here.

The savings banks generally did not join the Federal plan at first because they considered themselves preferred risks. The plan adopted in 1935 authorized the FDIC to establish a separate fund and set lower assessment rates for mutuals, but by that time the mutuals had gone far toward providing their own systems of insurance. In the process of setting up their own plans, the savings banks were impressed with the desirability of providing means to prevent failures along with those to protect depositors against actual losses. The Mutual Savings Banks Fund in New York State set up several safeguards against the possibility that the failure of weaker banks might endanger the fund. The belief was that the FDIC was the "undertaker," not the "doctor."

After the FDIC had been in operation nearly ten years it became apparent that preventive actions (regulation, examination, and mergers) were among its most important functions. Also, since 1933 various reforms had taken place in banking laws. Commercial banks were better safeguarded against insolvency through more complete access to the reserve banks, and the Comptroller of the Currency and state officials were much less free with new bank charters. Banks in general were more restricted in their investment policies. Examinations had become more expert and thorough, and, all in all, savings banks no longer could consider themselves to be as greatly superior in risk as they had been prior to 1933.

In 1942 a few large savings banks withdrew from state plans and cast their lot with the FDIC. These banks were impressed with the argument that FDIC insurance had the advantage of wide diversification; conditions over the entire country are averaged out in the Federal plan, and local conditions, which might lead to failure as in the state plans of 1907 and later, could be overcome. They also felt that at the $\frac{1}{12}\%$ rate they would get a better bargain than do the large commercial banks. Most states with mutuals limit the size of deposits (in New York, for example, to \$7,500). Therefore, the \$5,000 limit on deposit insurance would not mean a large proportion of uncovered deposits in the savings banks. As the savings banks were paying $\frac{1}{10}\%$ to the New York fund, they would pay a slightly

smaller premium to the Federal fund. At the same time they would obtain almost complete coverage and enjoy the protection of assessments paid by commercial banks on uncovered deposits. The savings banks' coverage would be about 95% of deposits, the commercial banks' coverage about 40%. (Under state savings bank plans coverage was 100%.)

A committee appointed by the Savings Banks Association in New York State concluded that

We have no reason to doubt the adequacy (of either the Federal or state plan) to deal with future losses, arising out of the banking operations of their respective members. However, it should be frankly recognized that neither can hope to deal with the remote contingency of a financial cataclysm.¹⁵

The Committee favored maintenance of the Mutual Savings Banks Fund largely to avoid Federal supervision. Withdrawal of some of the larger banks, however, led state officials to believe that the remaining savings banks would be better protected in the FDIC; their decision led to the mass exodus of the savings banks into the Federal plan. The FDIC was prepared to recruit a staff of examiners trained in savings bank work and to arrange FDIC examinations to take place at the same time and along with state examinations.

The Connecticut plan is interesting mainly in its reversal of the New York action. Connecticut banks had established in 1933 a Central Fund similar to the Savings Banks Trust Company in New York. Its main function was to provide liquidity for member banks by making loans on the security of investments or mortgages. In 1935 it was authorized to make direct contributions to the surplus of a bank when such action might avert the bank's failure. Thus the Central Fund, although it was not directed or required to do so, acted as an insurance fund, but did not collect assessments. In 1943, the legislature adopted a plan whereby the Central Fund was converted to the Deposit Guaranty Fund, which was made up of the existing funds plus contributions from the savings banks of $\frac{1}{4}$ of 1% of their deposits for three years, plus regular annual assessments of $\frac{1}{25}$ of 1%. When the fund reached $1\frac{1}{2}$ % of the member banks' deposits, it could pay dividends to the member banks from its revenues. In operations, the fund either must restore the solvency of a failed bank

¹⁵ *Savings Bank Journal*, April, 1943, p. 11.

by whatever contribution is required, or pay off the depositors, the decision to be made by the State Commissioner of Banking. As a protective measure, the fund may suspend a member bank in much the same way that the FDIC may suspend insured banks.

XXIV

CREDIT POLICY TO 1931

THIS CHAPTER deals with the problems met by the reserve system up to the outbreak of the great depression of the 1930's. It presents in historical sequence the use of the instruments of credit control described in Chapter XVIII.

World War I

The year 1914 marked the beginning of operations by the reserve banks as well as the start of World War I in Europe. Consequently, the system was faced immediately by problems connected with the war. After a short period of uncertainty, the years prior to 1917 were a period of increased business activity and rising prices. Foreign buying stimulated production and resulted in the sending of gold to this country in payment for goods; thus the volume of bank reserves increased. Reserves already were ample, partly because of the reduction in reserve requirements that accompanied the establishment of the reserve banks. Banks deposited a large part of their gold in the reserve banks, and they also sent gold coins that had been in circulation to the same source in exchange for Federal reserve notes.

The entrance of the United States into the war brought about a

policy on the part of the reserve system of adapting reserve bank credit to Treasury desires in financing the war. The Reserve Board at first protested against the Treasury policy of borrowing a large part of the needed funds from banks, but Secretary of the Treasury McAdoo paid little heed. The Treasury obtained more than half of its wartime revenues by selling bonds. Short-term certificates were sold frequently and then redeemed by the proceeds of Liberty Bond flotations.

Reserve Bank Credit in the Inflation

To a large extent these bond sales were inflationary, in that the bonds were bought by banks or by individuals with funds borrowed from banks. The reserve banks assisted this process by establishing preferential discount rates on advances to member banks secured by government paper. Deposits granted the government in exchange for bonds were exempt from reserve requirements (as in World War II) but as the government deposits circulated to other owners, required reserves were greater. Hence the banks soon borrowed from the reserve banks. The rediscount rates were set below market rates, so that banks could obtain reserves at rates lower than those they could earn on government bonds. Along the same lines, member banks lent to their customers at the same rate as that paid by government bonds, so that borrowers had no extra cost when buying bonds with credit.

In 1917 a further reduction of member bank reserve requirements was made, and all legal reserves were concentrated at the reserve banks. This provision, along with gold imports, further increased the reserves of the reserve banks. During the war some of the large state banks joined the system, with the same result. The reserve banks extended additional funds to the money market through open-market purchases of government securities. In terms of the factors of increase and decrease, member bank reserves doubled and the volume of Federal reserve notes rose fivefold. The increase in the earning assets of the reserve banks during the period of hostilities was about ninefold. Member bank reserve balances were just under \$2,000,000,000 at the end of 1918, and total reserve bank credit was about \$2,500,000,000. Most of this was represented by rediscounts and advances, which stood at \$1,750,000,000. Under the reserve

requirements at that time each dollar of added gold at the reserve banks permitted the extension of about \$2.50 of reserve bank credit, which, as additional bank reserves, allowed about \$20 of additional bank loans or investments. The newly established system was thus a potent factor in making possible the expansion of means of payment.

This relatively great increase in purchasing power led to rapidly rising prices. Wholesale prices approximately doubled by the beginning of 1919. Price control measures on essential commodities were instituted by the government but only after prices already had risen considerably.

Postwar Deflation

At the end of the war some of the reserve officials were anxious to take steps aimed at preventing further inflation. Such steps would have consisted of a general tightening of credit; the stopping of open-market purchases and the raising of rediscount and bill-buying rates, in order to reduce bank reserves and bank loans. However, the Treasury found it necessary to float a final Victory Loan, and these restrictive measures would have made it difficult for the Treasury to sell bonds. It will be recalled that the Secretary of the Treasury was an ex officio member of the Board at that time, as was the Comptroller of the Currency, a Treasury official. In addition, it was argued by many that the end of the war would be followed by a depression and unemployment and that the reserve banks should do nothing to further such a tendency.

The rising price level encouraged a great deal of speculation in commodities, real estate, and securities, which contributed further to the rising prices. To a large extent speculators financed with bank loans the withholding of their goods from the market, as did those purchasing securities and real estate. The peak of the price level was reached in the spring of 1920, when the Bureau of Labor Statistics index of wholesale prices was approximately two and a half times its 1913 level.

In spite of these developments, the low rediscount rates of the war period were maintained, and banks found it easy to increase their loans and investments. The Reserve Board was slow in abolishing the preferential rates on advances secured by government paper. The

banks had a large volume of such eligible government paper; furthermore the banks' customers could secure their bank loans with government bonds. When the Reserve Act was passed there was, of course, only a small government debt, and this situation had not been foreseen.

Attempts other than direct action by the reserve banks had little effect. So-called "moral suasion," publicity, and warnings from the Board and the reserve banks were insufficient to induce banks to reduce their earning assets. Treasury finance did allow some increase in rediscount rates late in 1919, but these rates were still well below market rates and did not decrease the volume of rediscounts. In furtherance of their policy of supporting the acceptance market, the reserve banks continued to purchase bankers' bills, which poured more funds into the money market. Total reserve bank credit exceeded three billion dollars throughout 1920.

The speculative bubble burst in 1920, when inventories had piled up, foreign buying had eased off, and exports of agricultural products particularly had been curtailed. Wholesale prices fell as sharply as they previously had risen; business failures increased; business losses exceeded business profits; and production and employment dwindled. Criticism of the reserve system for its part—real or fancied—in this deflation was widespread and severe. The reserve banks were accused of causing the depression by raising rediscount rates in 1920, and of discriminating particularly against agricultural interests in credit policy.¹ The numerous studies, investigations, and inquiries into this period of reserve bank history generally agree that whatever blame attaches to the reserve system should be for its failure to control inflation at the start rather than for any failure to prevent the deflation. Once the inflation was well under way, the reserve officials had little choice except to attempt to restrict it. Failure to prevent the growth of bank credit in 1919 and 1920 meant only that the eventual readjustment would be that much more severe. If the 1919–1920

¹ Naturally, part of the criticism was political. It also concerned itself with reserve bank earnings, which were large because of the expanded earning assets. Salaries of reserve bank officers were a target. These salaries were more in line with those in big commercial banks than those in government. President Harding filled two vacancies on the Board with Republicans and added a new member, as permitted by law, to represent Agriculture. This appointee had been head of a milk producers' association in Michigan. An exhaustive Congressional investigation cleared the Board of charges of discrimination, and concluded favorably for the Board.

boom had been prevented, there would have been fewer high prices to fall and fewer excessive inventories to liquidate in 1921-1922.

Reserve Bank Action in the Deflation

Once the depression had started, the reserve banks were slow in reducing rediscount rates, but, starting in May, 1921, the New York Reserve Bank began to reduce its rate from 7% (to which it had been increased from 4% at the end of the war) by steps of $\frac{1}{2}\%$ at a time until it again reached 4% in June, 1922. Other reserve banks reduced their rates similarly, but the decline in business activity and the liquidation of security holdings led to a decline in rediscounts to a low of \$400,000,000 in August, 1922. Continuing imports of gold and declining money in circulation also gave the banks reserves with which to reduce their indebtedness. Little was done with open-market operations, and total reserve bank credit declined to a little over a billion dollars in 1922, when member bank reserves were almost as great.

The 1923 Policy Statement

In 1923 the Federal Reserve Board published its concept of proper credit policy in a famous statement on "Guides to Credit Policy." In this statement the Board rejected several guides to central bank policy, some traditional and some that were being urged upon it. First, the Board pointed out that the reserve ratio of the reserve banks was not a proper guide to desirable credit conditions. If the reserve ratio of gold to reserve bank deposits and notes had been the guide, the reserve banks would have followed easy-money policies when the ratio was high and vice versa. This policy was traditional with the Bank of England, which had maintained the British gold standard in this way; that is, it had protected gold reserves by raising interest rates in order to keep money at home when the ratio was declining. If the reserve banks had followed this policy, they would have reduced rediscount rates even though bank loans were high and prices rising. As a matter of fact, this policy was the one urged upon the Board by the Advisory Council at the time. According to the Board, however, gold movements were influenced by such things as payments of war debts and postwar international loans, which were not related to business conditions. It is to be noted that the tendency

for gold to come to this country throughout the 1920's would have meant, on this criterion, continuous easy money during the decade in spite of the ever-present speculation.

A growing body of opinion favored maintenance of a stable price level as a guide to credit policy. The Board also rejected this proposal on the ground that it was impossible. According to the Board's reasoning, the price level fluctuates for many reasons besides credit conditions, and certainly not in strict conformity with the volume of cash and bank deposits. According to the Board, the volume of money follows rather than precedes changes in business conditions. When production increases, bank loans and deposits increase, as does the volume of cash in circulation. Furthermore, a price index always records a past, accomplished development; the Board felt that to follow an index of prices would keep it always behind events.

Although recognizing that the volume of credit at times might be excessive, the Board reasoned that if credit were properly used little danger would arise of there being too much. The theory was that if loans were made only for productive purposes—in other words, if bank credit were based on quality—it is unlikely that they would be excessive. By productive loans the Board meant loans for production, transportation, distribution, and normal storage of goods. Loans which keep up the production of commodities and their regular flow through channels of trade and commerce were considered productive. Loans for purchase of securities or real estate, or to hold commodities off the market for a rise in price, do not add to the total volume of production, and therefore were deemed unproductive.

In a sense, this announcement of credit policy was a reiteration of the theory on which the reserve system was established, with its emphasis on eligible paper. However, as the war and its inflation and postwar deflation had presented the reserve system with immediate problems to solve prior to this announcement, so the remaining years of the decade also gave rise to problems that called for other solutions. It is debatable whether the Board held closely to this announcement throughout the rest of the twenties.

Repelling Gold

The next few years, 1924–1927, were characterized by the beginnings of great stock-market speculation and the re-establishment of

the gold standard in Europe. Both events profoundly affected reserve bank credit policy. During this period, there was general industrial prosperity; prices were fairly stable, but industrial production continued to rise, and employment and wages were favorable. Agriculture continued to suffer from its wartime expansion, but this condition did not prevent the rest of the country from enjoying good times.

In 1924 the reserve banks lowered rediscount rates and purchased government bonds. There is dispute among historians of the system as to whether the action was designed to stimulate business activity, which slumped slightly in that year, or to assist England to restore the gold standard, or both. In any event, it seems that the second goal was at least partly responsible. An easy-money policy in the United States would tend to repel gold, because interest rates would be higher in London, and funds would tend to flow (or stay) there. In 1925, the reserve system arranged a loan to the Bank of England, allowing the latter to draw up to \$200,000,000 in gold from the reserve banks. Reserve bank credit outstanding in 1925 increased during the year by \$135,000,000 to replace gold exports, provide more money in circulation, and add to bank reserves.² The goal of business stability expressed in the 1923 Policy Statement was apparently an important consideration during the year. The criterion of price-level stability does not appear to have influenced the Board.

Conditions were much the same during the following year, with production increasing. The year

. . . was a year of exceptionally large output by the country's factories, mines, and farms; of orderly distribution of commodities through the channels of trade; of declining price level, and of sustained demand for merchandise by consumers. The large volume of business activity was accompanied by a gradual rise of bank credit outstanding to the highest level on record, and increased flow of savings into investment channels, a continuous decline in long-time money rates, and a stable and relatively easy condition in the short-term money market.³

The easy-money policy was followed again in 1927, when reserve bank holdings of government bonds doubled from approximately \$300,000,000 to \$600,000,000 and rediscount rates were lowered from 4% to 3½%. This time the policy was an announced one of reversing the flow of gold to this country. This gold movement was

² Federal Reserve Board, *Annual Report*, 1925, p. 1.

³ Federal Reserve Board, *Annual Report*, 1926, p. 1.

creating difficulties for England and France at a time when the latter was preparing to return to the gold standard. In addition, although business activity was fairly stable, there was a slight decline in wholesale prices, and furthermore, there was a hope that lower rates would

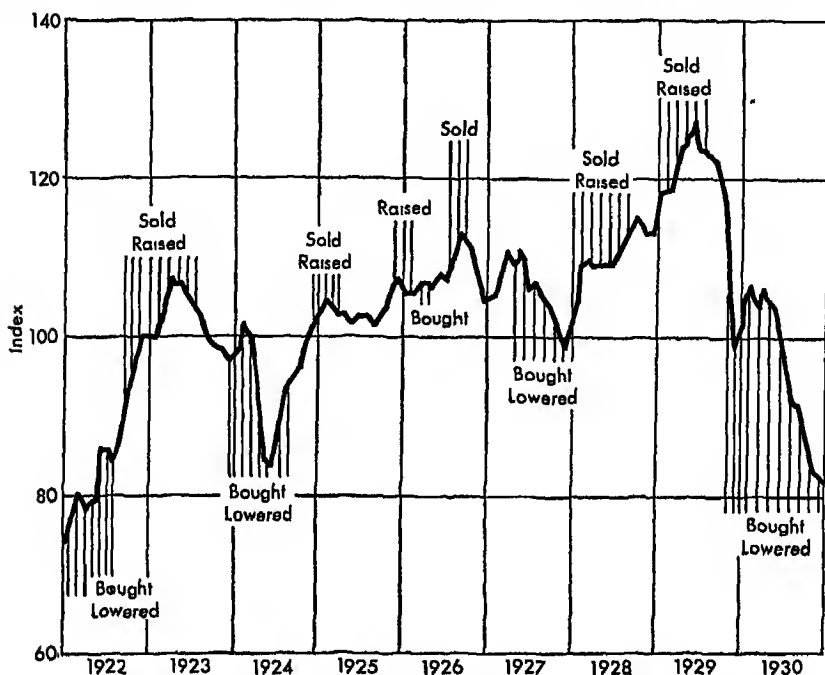


FIG. 29.—Reserve Policies and Production, 1922–1930. The chart shows the Federal Reserve Board index of industrial production. "Bought" and "Sold" refer to open-market operations; "Raised" and "Lowered" refer to the rediscount rate. (After H. Parker Willis, *The Theory and Practice of Central Banking*, New York, Harper and Brothers, 1936, p. 196.)

stimulate borrowing in the American market to finance exports. The results were summarized by the Board as follows :

In consequence of the somewhat smaller volume of production and employment in 1927 compared with the previous year, the demand for bank credit to finance the current operations of trade and industry in 1927 was no larger than the year before. There was, nevertheless, a rapid growth of member bank credit, total loans and investments of all member banks increasing by \$2,783,000,000 during the year, and those of reporting member banks in leading cities by \$1,673,000,000, or 8.4%. This increase compares with one of 2.1% in 1926 and 5.2% in 1925. . . . That the growth of member bank credit during the year has not been due to a demand for loans from industry and trade, is indicated by

the fact that "all other loans," which comprise loans for commercial, agricultural, and industrial purposes, as well as real estate loans, have actually decreased during the year. . . . That the increase in loans on securities has largely reflected the increased use of credit by the security markets is indicated by the fact that loans to brokers and dealers in securities placed by the weekly reporting member banks in New York City increased by 33% during the year ending in December, 1927.⁴

The Problem of Speculation

The easy-money policy seemed to stimulate the rising tide of stock-market speculation. Security prices rose faster than ever, and banks became more deeply involved by increasing their loans on securities and their loans to brokers. The volume of round-lot trading and prices on the New York Stock Exchange are shown in Table 53.

TABLE 53
ROUND-LOT TRADING AND PRICE INDEX,
NEW YORK STOCK EXCHANGE,
1921-1930

Year	Volume (millions of shares)	June Price Index (1935-39 = 100) ¹
1921	173	55.7
1922	261	71.8
1923	236	70.9
1924	284	73.3
1925	460	91.8
1926	452	102.6
1927	582	121.9
1928	931	153.4
1929	1,125	201.4
1930	811	161.4

¹ Index covers common stocks only.

Source: *Banking and Monetary Statistics*, pp. 481-82, 485.

Brokers' Loans

It is apparent that common stock prices more than doubled between June, 1924 and June, 1928, while the volume of trading was nearly four times as great. This increase in trading brought forth brokers' loans as shown in Table 54. These figures illustrate the very great importance of brokers' loans made by the banks as agents for

⁴ *Annual Report*, 1927, pp. 4-6.

others, rather than with their own funds. While it is true the New York banks increased their loans appreciably, most of the increase came from banks in the interior, for whom the New York banks made the loans, and from business corporations and other nonbankers.

Faced with this speculation, the reserve banks reversed the easy-money policy. Rediscount rates were raised from $3\frac{1}{2}\%$ to 4% and then to $4\frac{1}{2}\%$ and later in the year eight banks set 5% rates, while the rate on bank bills was also raised. Since member banks had excess reserves, open-market sales of about \$400,000,000 were made to enforce the rediscount rate. The open-market sales exhausted the holdings of the reserve banks, thus eliminating this instrument from use in the immediate future. These measures were successful in reducing

TABLE 54
BROKERS' LOANS BY GROUPS OF LENDERS,
1921-1930, JUNE DATES
(millions of dollars)

Year	Total	New York City Banks	Outside Banks	Others
1921	1,000	365	255	380
1922	1,670	790	370	510
1923	1,730	800	420	510
1924	1,740	950	380	410
1925	2,660	1,150	770	740
1926	2,930	1,060	780	1,090
1927	3,570	1,130	970	1,470
1928	4,900	1,080	960	2,860
1929	7,070	1,360	665	5,045
Oct. 4, '29	8,525	1,095	790	6,640
1930	3,795	1,885	480	1,430

Source: *Banking and Monetary Statistics*, p. 494.

the volume of demand deposits, but the Board was much more interested in the use made by the member banks of their funds, and these measures did not succeed in reducing the loans on securities or the total loans and investments or the volume of rediscounts.

Gold withdrawals on a large scale and continued growth of bank credit resulted in an increased demand for reserve bank credit and, owing to security sales by the reserve banks, in an even larger increase of indebtedness of member

banks. As a consequence, money rates advanced to the highest level in seven years. Rate advances, however, were much sharper for loans on securities than for commercial loans, and there was no evidence of unfavorable effects of higher money rates on trade and industry.⁵

TABLE 55

WEEKLY REPORTING MEMBER BANKS
IN 101 LEADING CITIES—
NET DEMAND DEPOSITS, LOANS ON SECURITIES,
TOTAL LOANS AND INVESTMENTS AND BORROWINGS AT
FEDERAL RESERVE BANKS, 1928
(millions of dollars; monthly averages)

Month	Net Demand Deposits	Loans on Securities	Total Loans and Investments	Borrowings at Federal Res. Banks
January	13,982	6,811	21,493	314
February	13,673	6,606	21,315	338
March	13,579	6,586	21,502	362
April	13,814	6,924	21,944	488
May	13,760	7,075	22,148	644
June	13,450	6,962	22,063	796
July	13,246	6,955	22,006	854
August	12,902	6,816	21,809	806
September	13,049	6,840	21,871	822
October	13,216	6,874	21,938	736
November	13,369	7,082	21,983	681
December	13,399	7,198	22,189	799

Source: *Banking and Monetary Statistics*, p. 141.

This reversal of policy caught the reserve banks in several contradictory positions. First, the higher interest rates enforced on the money market—brokers' loan rates went to 8%—attracted funds from abroad and largely nullified the attempt to prevent gold imports. At the same time, the reserve banks feared that the higher rates would "penalize legitimate business" and perhaps cause a business recession. There was some doubt whether the reserve system had any legitimate interest in stock prices. The lack of security holdings to be used in open-market operations and the fear of the effects of higher interest rates led the Board to use of direct pressure. The con-

⁵ Federal Reserve Board, *Annual Report*, 1928, p. 1.

cern of the Board with speculation in securities was expressed in a warning issued early in 1929.

During the last year or more . . . the functioning of the Federal Reserve System has encountered interference by reason of the excessive amount of the country's credit absorbed in speculative security loans. The credit situation since the opening of the new year indicates that some of the factors which occasioned untoward developments during the year 1928 are still at work. The volume of speculative credit is still growing.

Coming at a time when the country has lost some \$500,000,000 of gold, the effect of the great and growing volume of speculative credit has already produced some strain which has reflected itself in advances of from 1 to 1½% in the cost of credit for commercial uses. The matter is one that concerns every section of the country and every business interest, as an aggravation of these conditions may be expected to have detrimental effects on business and may impair its future.

The Federal Reserve Board neither assumes the right nor has it any disposition to set itself up as an arbiter of security speculation or values. It is, however, its business to see to it that the Federal reserve banks function as effectively as conditions will permit. The Federal Reserve Act does not, in the opinion of the Federal Reserve Board, contemplate the use of the resources of the Federal reserve banks for the creation or extension of speculative credit. A member bank is not within its reasonable claims for rediscount facilities at its Federal reserve bank when it borrows either for the purpose of making speculative loans or for the purpose of maintaining speculative loans. The board has no disposition to assume authority to interfere with the loan practices of member banks so long as they do not involve the Federal reserve banks. It has, however, a grave responsibility whenever there is evidence that member banks are maintaining speculative security loans with the aid of Federal reserve credit.⁶

As a result of the conflict of these goals of credit policy mentioned above, reserve policy appeared confused. In 1929 the New York Reserve Bank demanded permission from the Board to raise its rediscount rate to 6%, but rates were not raised at other banks, and the buying rate on acceptances was lowered. This was the result of trying to raise the cost of credit for speculative loans and lower it for business. The result was a decline in rediscounting but an increase in sales of acceptances to the reserve banks, so that bank reserves were not reduced. The Reserve Board urged banks to reduce their loans on securities and to brokers and to make only business and commercial loans. The reserve banks restricted their rediscounting for banks

⁶ This quotation includes parts of two warnings issued in February, 1929, and quoted in the Board's *Annual Report for 1929*, pp. 2-3.

which made use of reserve bank credit in order to maintain their brokers' loans. However, the Reserve Board had no control over the loans for account of others, which continued to rise. The volume of bills bought offset the decline in rediscounts, and the volume of reserve bank credit followed its usual seasonal increase throughout late 1929.

The Stock-Market Crash

Stock prices ceased their rise in September and, after sagging slightly for about a month, fell precipitously in October. The stock-market crash signaled a general liquidation and deflation, leading to the depression of the 1930's.

At the end of October the drop in security prices was accompanied by a subsidence in the demand for credit from the stock exchange; a drastic liquidation of security loans; outflow of gold, and an easing credit policy by the Federal Reserve System. Industrial activity was in exceptionally large volume until the middle of the year, but began to recede in July and declined rapidly in November and December. . . . In the latter part of the year large purchases of acceptances by the Federal reserve banks, followed in the last two months by purchases of Government securities, enabled member banks to reduce their borrowings, and by the end of the year discounts were in the smallest amount for nearly two years; this low level of indebtedness of member banks was an important factor in the easier condition of the money market.⁷

The banks in the interior and the "others" called their brokers' loans, the New York banks shouldering a large part of them, as described in Chapter XI. The Federal Reserve Bank of New York made possible this shifting of loans by providing the New York banks with reserves through rediscounting and open-market purchases. The reserve system continued a policy of monetary ease in order to prevent as far as possible the drastic liquidation of loans. "This policy was expressed through the purchase at intervals of additional United States Government securities and in progressive reductions of reserve bank discount and acceptance rates."⁸ Reserve bank credit outstanding declined during 1930 because of the decline in bank loans and also because of gold imports from Latin America and a reduction in the volume of money in circulation.

The depression was well under way by the end of 1930.

⁷ Federal Reserve Board, *Annual Report*, 1929, p. 1.

⁸ Federal Reserve Board, *Annual Report*, 1930, p. 1.

Nineteen hundred and thirty-one was a year of continued depression in business, of reduced employment, and of decline in values. The volume of bank credit decreased continuously during the year, there were many bank failures, and severe disturbances occurred in financial conditions both here and abroad.^a

During the first nine months of the year the Federal Reserve System pursued a policy of further easing credit conditions through open-market operations. In the autumn of the year, when, following upon the suspension of gold payments in England, the system was subjected to heavy withdrawals of gold from abroad and of currency for hoarding in this country, it met these demands freely by discounting paper for member banks and by the purchase of acceptances in the open market.^b

These latter developments bring us to a consideration of the more purely monetary, as contrasted to banking, developments connected with the world-wide depression. These developments are considered in the next few chapters.

^a Federal Reserve Board, *Annual Report*, 1931, p. 1.

XXV

FOREIGN MONETARY DEVELOPMENTS PRIOR TO 1930

IT WAS pointed out in the last chapter that Federal reserve policy at times during the 1920's was influenced by monetary developments in other countries, particularly in regard to the restoration of the gold standard in England and France. In this chapter we will examine how these major countries along with Germany dropped the gold standard during World War I and how they restored it after the war. This description will lead naturally to an explanation of the international breakdown of the gold standard during the 1930's.

World War I

England

England had a gold standard in operation from 1821 until the suspension of redemption at the outbreak of the World War. The central institution was the Bank of England. This central bank, like the reserve banks in this country, was the issuer of a large part of the nation's hand-to-hand money, and it carried deposit balances of other banks' reserves. The arrangement differed from the American

plan in that the Bank of England carried deposits other than those of banks and the government, and also the English banks had no legal minimum reserve requirements. The Bank was required to have a 100% reserve for its notes, except for a limited "uncovered" or fiduciary part which amounted to £18,450,000 prior to the World War. It ordinarily maintained a 40% to 50% gold reserve for its deposits, which was the ultimate redemption source in the English gold standard.

Upon the outbreak of war in 1914, the British took two steps to provide the volume of circulating medium which they expected would be required. One was to "suspend" the Bank Act, in order that the Bank could issue and lend to the commercial banks new paper money in the event that runs on the banks should require that they pay out more money than they had in reserves, or could readily obtain. The other step was a provision for the government to issue paper money called currency notes. Although legally redeemable in gold, these notes actually could not be redeemed at the time, and hence they were similar to the Civil War greenbacks in this country. The Bank of England notes similarly were not redeemable after hostilities began. Actually the Bank gained a great deal of gold, not only because the people were persuaded to exchange gold coins for paper money, but the commercial banks likewise exchanged their gold coin reserves for Bank of England notes; thus a very large part of the gold in the country was concentrated in the Bank.

The suspension of the Bank Act made it possible for the Bank of England to provide the other banks with deposit reserves, as well as to lend new deposits to the government without being limited by the former requirements concerning gold reserves. During the war the Bank lent a large volume of money (in the form of deposits) to the government. As these funds were spent, the recipients made deposits in the commercial banks which thereby built up reserves in the form of deposits at the central bank. The commercial banks then were able to buy government bonds and to lend to their customers. As a result, bank deposits rose from about £1,100,000,000 before the war to £2,700,000,000 in 1920. This large volume of deposits, along with higher prices and great business activity, required an increased amount of money in circulation. Most of this was provided by the government in the form of currency notes, which would be deposited

at the Bank of England. The Bank then would meet withdrawals by banks with these notes, and the banks in turn would meet the drain of cash to circulation with them. About £370,000,000 of these currency notes were issued.

The great demand for commodities by the government and the increased volume of money in the hands of the public, which in turn became demand for commodities, led to a considerable rise in the British price level. By 1920, the price level was somewhat more than 300% of its prewar level.

Exchange Value of Pounds

The rise in prices, the inability to exchange pounds for gold, and the great demand for imports, tended to reduce the value of the pound on the foreign exchange market. As the British government purchased commodities in the United States, there was a demand for dollars in New York to pay for them. As American exporters drew commercial drafts against London, this demand for dollars showed up in the form of a large supply of such drafts in New York. Since bankers were not acquiring an equivalent volume of dollar drafts, the surplus of pound drafts tended to depress their value. Similarly, the rise in English prices, since it was greater than the rise in American prices, tended to reduce British exports, which otherwise might have produced some of the foreign exchange to pay for British imports, although war conditions would doubtless have made necessary an excess of British imports in any event.

As explained in Chapter XVII, if pounds had been redeemable for gold at the prewar value of 113 grains, bankers would have continued to purchase drafts drawn on London at a discount adequate only to cover the cost of bringing gold back from London. The pound thus could have fallen from the mint par of \$4.86 only to about \$4.84, that being the gold import point in New York. However, as this fixed exchange rate did not exist—and even if gold had been available in London all of it would soon have moved to New York—the pound was free to fall to whatever price would equate supply and demand. In 1915 it had fallen to \$4.50.

Obviously, the lower the exchange value of the pound, the more pounds the British had to pay to get American goods. In 1915 the government would have had to raise one pound in taxes or loans to

buy a \$4.50 pair of shoes, but if the exchange rate had fallen to \$2.25, it would have required two pounds instead of one to buy the same shoes at the same price in America. Hence it was essential for the British to "peg" the exchange rate. Prior to the entry of the United States into the war, this was done by obtaining loans from J. P. Morgan and Co. in New York. These borrowed dollars were used to purchase pound drafts in volume sufficient to keep the exchange rate from falling. In other words, they offset the excess of payments owed Americans over payments due the English, including payments due in both directions stemming from trade with third countries. The rate at which the pound was pegged was \$4.76, a rate which was maintained until March, 1919. After this country entered the war, the government took over the required lending and made available \$4,000,000,000 more.

The pound fell rapidly after this support was removed in 1919, reaching \$3.20 in 1920. The volume of exports and imports between the two countries, including securities and other "invisible" exports and imports, determined the supply of and demand for foreign exchange in London and New York. Except for loans and interest, the balance of payments depended on the relative attraction of buying in each country. Thus the low exchange rate reflected the high British prices: the pound was no longer worth about five times as much as a dollar in purchasing power, but closer to three times as much. This was the result of the fact that prices had risen higher in England than in the United States.

France

The experience of France may be treated briefly because it was so similar to that of England. The French promptly suspended redemption, the gold value of the franc having been equivalent to that of 19.3 cents. Heavy purchases in the United States drove down the value of the franc, as in the case of the pound, to about 17 cents, at which point it was pegged with the proceeds of approximately \$3,000,000,000 in loans from the United States. As in England, the central bank, the Bank of France, lent to the government. In France bank notes were used more commonly and deposits less commonly than in England; hence these loans entailed a great increase in the note issue. The note issue of the Bank of France did not exceed 7

billion francs before the war, but by 1920 the figure had risen to over 40 billion. By that date French prices were 509% of their 1913 level.

Germany

Germany similarly suspended the gold standard when the war started. There, the Reichsbank had previously been required to maintain a one-third gold reserve for its notes, the other two-thirds being represented by commercial paper (bills of exchange). As a war measure, the reserve was allowed to consist of the paper money issues of the government (similar to the British currency notes), called *Reichskassenscheine*, and of special loan bureaus, whose currency was called *Darlehenskassenscheine*. The process of inflation was similar to that in England: the government borrowed heavily from the Reichsbank, taking notes or deposits which it paid to its creditors. Periodically the government sold long-term bonds to the banks and other investors, using the proceeds to repay the Reichsbank. The other buyers obtained the money which was used to buy bonds partly from the original increases by the Reichsbank; in addition purchases by the other banks further increased the money supply. As more notes were required for retail trade, wage payments, and other uses, the volume of *Reichskassenscheine* was increased. Price control measures were probably more strict in Germany than in England, for, although the inflationary tendencies were strong, prices at the end of the war were about 250% of the 1913 level.

The same foreign exchange problem existed for the Germans as for the other belligerents, but Germany was much less able to control the rates with foreign loans. The prewar mark was worth 23.8 cents in gold but fell to less than 14 cents in 1917. Speculative purchases of marks, when the Germans appeared to be winning the war, raised the rate again to the equivalent of 20 cents in world markets. After America's entry into the war the mark again fell, to half its prewar rate at the end of 1918.

Postwar Developments

England's Postwar Policy

Although wartime developments were very similar in all three countries, postwar solutions to monetary problems differed consid-

erably. The English were anxious to restore their prewar gold standard. This desire is explainable partly on grounds of the importance of finance in England; London then was the world's monetary center, and a stable pound was considered necessary to a continuance of this situation. Conservative anti-inflationary philosophy prevailed in England. It naturally would be to the advantage of fixed-income groups, the wealthy, and the export trades to have lower prices, and these groups prevailed.

Consequently, after the war the government followed a policy of restriction. Measures were adopted which were designed to lower prices from their 1920 peaks. Interest rates were kept high, loans were restricted, and taxation was heavy. All of this was burdensome to the British economy. Debts, which are fixed amounts, and the interest on debts, are easier to pay when prices and incomes are high. This is particularly true when, as was the case with the government debt in England, some of the debts are external—owed to foreigners. If taxes collected by the government are paid back to taxpayers as interest on their government bonds, the taxes may seem high but they are not particularly burdensome. If, however, the funds are not paid back but are paid to foreigners, there is no compensating income. The various restrictive measures kept expenditures, business activity, and wages down during the postwar period.

This policy was necessary, once it was determined to restore the gold pound of 113 grains of gold, because, unless English prices were "in line" with American prices, England would tend to have unfavorable exchange rates and lose gold as was the case during the war. Prices had to be low enough to provide exports enough to provide foreign exchange enough to balance the demand for it at the old gold par of \$4.86.

Results of Deflation

It was thought that this goal had been reached by 1925. The gold standard was restored in that year, as the gold bullion standard. In other words, gold was concentrated in Bank of England reserves by a provision that gold would not be coined, but that redemption would be made only for large amounts, and in gold bars. Hence, gold would not be dissipated in circulation. Federal reserve policy in the United

States helped by providing easy money and low money-market rates in America, and the Federal Reserve Bank of New York and J. P. Morgan and Co. made available \$300,000,000, if needed, to support the pound. These loans were set up to avert speculative sales of pounds which might depress the rate to the gold import point in New York. Partly because of the existence of the loans themselves, however, the speculation did not take place as feared, and consequently the loans were not used.

The gold standard in England, under the circumstances, was not firmly established. The gold reserves of the Bank of England were less than 30% of its obligations, which could not be deflated to their prewar level. The currency notes, for example, were assumed by the Bank, and its combined circulation and deposits were much larger than in 1913. The government debt was made relatively heavier by the deflation needed to bring prices down. The debt approximated £8,000,000,000; if prices were such that an exchange rate of \$3.00 prevailed, the debt would amount to about the same as the postwar American debt of \$25,000,000,000, but if prices were such as to make the pound worth nearly \$5.00, the debt would be as heavy as one of \$40,000,000,000. In other words, a tax of one pound for debt service required the giving up of \$3.00 worth of goods in one case and \$5.00 worth if prices were lower. As explained before, this made the international debt to the United States that much heavier. Furthermore, declining prices were not conducive to business prosperity and high employment, which might have produced the needed tax revenues more easily. In fact, the restoration of the gold standard was accompanied by a serious general strike in 1925.

Finally, it is questionable whether English prices, in comparison with those in the United States, actually were low enough to justify the old exchange rate. The problem was complicated by the existence of war debts, tariffs, and international loans, but in summary, at that exchange rate, England did not tend to have gold imports, easier money conditions, and an easing of the situation. On the contrary, gold tended to leave England for the United States and France, a situation which kept credit conditions tight in England and gold reserves at a point dangerously low for the preservation of the standard.

French Policy

The French solution followed a different course. In the first place, the price inflation that took place during the war continued at an accelerated pace after 1920. As the inflation was the result of the government's inability to balance its budget, there occurred a corresponding increase in government borrowing from the banking system and increases in the volume of money. French prices continued to rise until in 1926 they were more than eight times their prewar level. The exchange value of the franc reflected this depreciation. From its prewar value of nearly twenty cents, the franc fell to six cents after stabilization supports were removed by 1920, and then to two cents by 1926. The fall of the franc not only was a reflection of the rising prices, in that exports could not be made unless the francs with which the goods were bought were cheap, but the low international value of the franc tended to contribute to rising prices within the country. The low value of the franc meant high rates in Paris for other currencies, so that imported commodities cost more in France. To the extent that these imports were costs, such as raw materials, prices in France were further encouraged to rise.

In 1926 attempts were made to stop the inflation and to stabilize the franc. The government not only took steps to balance its budget, but it went even further, with the adoption of a policy of purchasing gold and silver and franc exchange with Bank of France notes. The purchases of franc exchange tended to raise the value of the franc, as did the other measures; the New York rate rose to four cents. After it appeared that the franc would be stabilized, Frenchmen who had been holding foreign funds and foreign investments began to sell them to "bring their money home." As this action created a further demand for francs, their relative value increased. In this manner, the Bank of France acquired gold reserves in exchange for its own notes. In addition, it soon was acquiring foreign exchange also in the form of foreign deposits convertible into gold in London or New York. After the restoration of the franc to the four-cent level, it was necessary, in order to keep it from going higher, that the Bank enter the exchange market as a buyer of drafts drawn on foreign money centers. A higher gold value for the franc was not desired. On the other hand, these transactions increased still further the note

circulation of the Bank, and created tendencies towards a development of inflation later.

Thus the French made no attempt to restore the prewar parity of the franc to the dollar or pound, but chose to adopt a new gold standard that would reflect the changed price levels. The new franc was worth about a fifth as much in relation to dollars, pounds, and gold as the prewar franc had been. It was thus unnecessary for the French to attempt to bring their price level down to its prewar relationship with other price levels, such as the American. In this way the French avoided the deflationary tendencies that arose in England as a result of the latter's restoration of the prewar price of gold.

The German Inflation

The situation in Germany was still different. High government debt, reparations, and costs of occupation led the government to continue deficit financing. It borrowed heavily from the Reichsbank, and soon ran into an inflationary spiral from which it could not escape. The continuing inflation raised government expenses and led to further borrowing and printing of money. The expenditures of these funds raised prices still more and necessitated still further issues of new money. As people grew more and more afraid that their money would lose its value in higher prices, they attempted to spend it quickly in order to buy something of value. This action still further raised prices and contributed to the spiral of government borrowing and inflation. The resulting situation, where there was an actual "flight from money," came to be called "hyperinflation." Such a fantastic rise in prices resulted that marks were virtually worthless; they actually approached the stage of being worth no more as money than as paper. The price level reached an index of 126,160,000,000,000 in 1923 (1913 = 100), and the monetary system broke down completely. People found it necessary to make their calculations of values, wages, and other payments in terms of foreign money. Those with fixed incomes or with insurance policies, mortgages, bonds, and other fixed credits were unable to purchase anything with their few marks. The total circulation reached 500,000,000,000,000,000 marks (five hundred quintillion).

As may be seen from Table 56, the inflation in the early postwar years was not especially severe (at least by comparison), and ap-

appeared to be subject to control. The Germans had more and more difficulty in arranging payments of reparations, however, and late in 1922 defaults appeared inevitable. Government expenditures increased from 209 million marks in 1921 to 48,725,711 million marks in 1923, while tax revenues rose only from 80 million to 5,057 million; government borrowing thus made up the tremendous difference. In early 1923 the French and Belgians occupied the Ruhr in order to enforce payment of certain reparations. This step led the Germans to "passive resistance": output of mines, transportation, and industries in the Ruhr virtually stopped. The German government financed those engaged in the resistance, but the decline of production further reduced tax revenues, and the heavy inflation began after the occupation of the Ruhr.

The rise in prices was so rapid after the "flight" from the mark began that people hardly could keep track of prices.

The rush to get rid of cash as soon as possible further led to an extraordinary increase in the rapidity of the circulation of money. Everyone who had payments to make, endeavored to make them as quickly as possible, before he could be caught by the depreciation. . . . The one idea was to dispose of (money) as speedily as possible.¹

The mere spending of money was more important than what was bought with it; any commodity would be worth more money in a matter of hours than when it was bought, and could be traded for other commodities. Thus more and more people, upon the receipt of money, bought whatever they saw first and sought to trade it for other things later; the country operated increasingly on a barter basis. This repudiation of the mark was complete by July. Stores were closed, because storekeepers did not want marks. Farmers refused to sell their produce. Trade and business tended to halt, and the stopping of the movement of goods led to hunger and riots. A new government came into power (the Stresemann cabinet), which signaled an end to the passive resistance, and a new monetary system was announced.

In the meantime, the inflation had had some beneficial results.

During most of the inflation period the progressive depreciation of the currency stimulated industrial activity and kept the mines and factories working

¹ H. Schacht, *The Stabilization of the Mark*, London, George Allen and Unwin, Ltd., 1927, p. 68.

full blast. The margin of industrial profits was widened by the reduction in capital charges—the result of the cancellation of long-term debts—and by the lag of wages and taxes behind the rising commodity prices. Demand for industrial goods during most of this period remained quite active, in part because of the feverish desire of many persons to convert the depreciating mark currency into anything that had inherent worth and in part because the general lag of wholesale prices behind the rapidly rising foreign exchange rates made for a large export market.²

Total production declined, however. Productivity was hampered by the export of capital goods, and domestic industries, insulated from foreign competition, felt little need for economy or efficiency. The inflation made it possible for many new and inefficient firms to begin business. Production in the German area enclosed by the postwar boundaries was estimated to have dropped to 60% of its 1913 volume by 1923.³

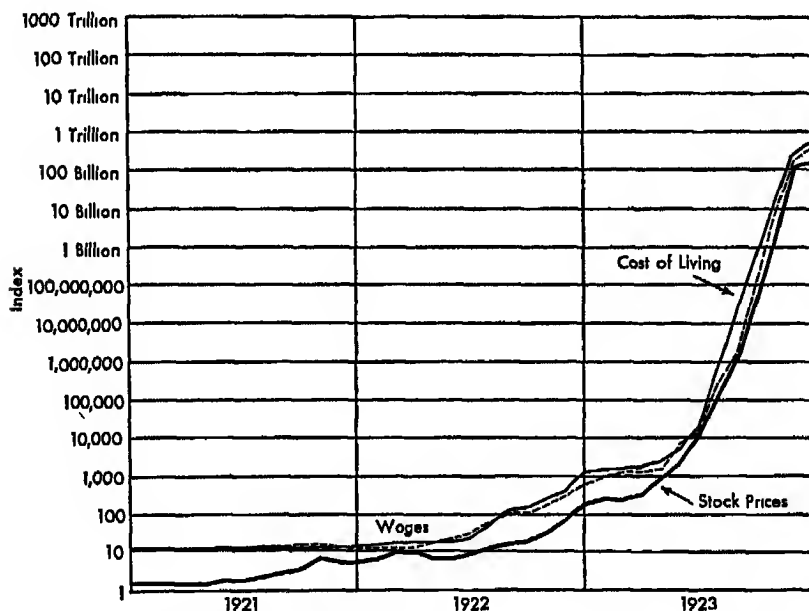


FIG. 30.—Cost of Living, Wages, and Stock Prices, Germany, 1921–1923. Ratio Scale. (Data from Kemmerer, *Money*, p. 291; 1913 = 1.)

² C. T. Schmidt, *German Business Cycles*, National Bureau of Economic Research, 1934, p. 12.

³ *Ibid.*, p. 14.

TABLE 56
STATISTICS OF THE GERMAN INFLATION,
1919-1923

Date	Index of Wholesale Prices (1913 = 1)	Index of Currency Circulation (1913 = 1)	Index of Marks per Dollar (par = 1)	Index of Wages of Unskilled Labor (1913 = 1)	Turnover of Money Index (Index of prices divided by index of circulation)
1920					
March	17	10	20		.7
June	14	11	9		1.2
September	15	12	14		1.2
December	14	13	17		1.0
1921					
January	14	13	16	11	1.1
February	14	13	15	11	1.0
March	13	13	15	11	1.0
April	13	13	15	11	.9
May	13	13	15	11	.9
June	14	14	17	11	.9
July	14	14	18	11	1.0
August	19	15	20	13	1.3
September	21	16	25	13	1.3
October	25	16	36	19	1.5
November	34	18	63	19	1.9
December	35	20	46	19	1.7

TABLE 56 (Continued)

1922	37	21	46	20	1.7
January	41	21	49	20	1.9
February	54	23	68	30	2.3
March	64	25	69	30	2.5
April	65	27	69	38	2.4
May	70	30	76	46	2.3
June	101	34	118	57	3.0
July	192	42	270	85	4.6
August	287	55	350	161	5.2
September	566	80	760	191	7.0
October	1,154	127	1,710	333	9.1
November	1,475	213	1,810	554	6.9
1923					
January	4,626	332	4,300	890	13.9
February	5,188	585	6,700	1,857	8.8
March	4,835	916	5,050	2,321	5.2
April	5,988	1,090	5,850	2,321	5.4
May	10,713	1,426	11,400	3,153	7.5
June	29,223	2,867	26,200	8,293	10.1
July	18,510	7,231	92,000	34,492	25.3
August	2,338,320	114,008	1,110,000	799,156	20.5
September	60,361,885	4,720,487	23,600,000	16,600,000	12.8
October	18,700,000,000	854,401,000	6,000,000,000	7,800,000,000	21.8
November	1,380,150,000,000	245,107,084,000	530,000,000,000	402,200,000,000	5.6
December	1,200,400,000,000	374,563,426,600	1,000,000,000,000	789,900,000,000	3.2

Sources: F. D. Graham, *Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920-1923*, Princeton University Press, 1930; J. W. Angell, *The Recovery of Germany*, Yale University Press, 1929

Needless to say, the cost of living was at fantastic heights in 1923, although it did not rise as high as did the wholesale price level until the end of the period, when everyone was holding on tenaciously to real goods. Wages rose only about half as much as did prices and the cost of living, and salaries rose even less. While the cost of living was estimated as being 1.2 trillion times as high as in 1913, wages of unskilled labor rose to about 700 billion times as high and wages of skilled labor to about 600 billion, while salaries of government officials only to 500 billion. It was doubtless an amazing experience for workmen, to be paid billions of marks and still be poorer than ever.

Gold Reserves

It is perhaps surprising that during this period of fantastic inflation the Reichsbank and German government possessed gold reserves of considerable magnitude. The gold reserves "behind" the paper money circulation, about \$1,000,000,000 worth, were virtually unchanged from 1920 until the spring of 1923. There could hardly be a more striking example of the fact that metallic reserves for credit money have little to do with its value, unless they are used to control the volume of money in circulation. In Germany, the gold reserves had a higher purchasing power than had the total volume of paper money in circulation—two or three times as much, at the end of the inflation. This situation reflects in part the worthlessness to which the paper money eventually depreciated. Based upon exchange rates in effect in November, 1923, the whole circulation of Germany was worth \$172,000,000, and at that time the gold reserves amounted to \$467,000,000.⁴ The fact that it was impossible to redeem even a small fraction of the tremendous number of marks in circulation, even had the government decided to try to do so, was what made this relationship possible.

The Cancellation of Debts

The almost complete destruction of the value of the mark meant a virtual cancellation of debts payable in marks. A lender who received repayment of a debt of 100,000 marks in 1923 acquired thereby virtually no purchasing power at all. When loans which had been made before the war matured in 1923, the loss to the lender was

⁴ E. W. Kemmerer, *Money*, New York, The Macmillan Co., 1935, p. 288.

practically complete. In the case of short-term loans, the losses were probably not so complete until the extremely rapid depreciation of 1923. The government, corporations, and individuals all were in effect relieved of paying their debts. The sale of a few hours of labor or of a trivial commodity brought enough to repay any debt contracted prior to the inflation. In 1923 a fraction of a cent would buy enough marks to repay the entire prewar debt of the German government. "The entire mortgage indebtedness of the German people, which was estimated to amount to approximately 40 billion marks in 1913, could have been paid off in November, 1923 with one American cent."⁵

More and more the German people realized the advantages of borrowing money to spend before prices rose higher, and some of the later German industrial dynasties were founded by businessmen who borrowed as heavily and for as long terms as possible. The growing demand for loans and the increasing reluctance to lend drove up interest rates to extreme heights, but still not high enough to recompense lenders for loss of capital. Holders of bonds, insurance policies, savings deposits, and the like received their interest or principal in marks, but the proceeds of an insurance policy which, in 1913, would have supported a family for years could not buy enough food for a day at the height of the inflation. As Kemmerer expresses it, "The owner of the bonds kept the bottles, but the wine rapidly leaked out." Thus savings were wiped out, but the real wealth in the country was not destroyed. The inflation merely transferred ownership from creditors to others. Generally this was a transfer of property from German to German, but in those cases where Germans owed debts to foreigners payable in marks the foreigners got nothing of value. Many foreigners bought marks for speculation when they were virtually free on the theory that the mark would be restored to some value, but their money was wasted.

That this redistribution of wealth was a very serious matter is apparent from Angell's description of its effects.

. . . people with small fixed incomes, such as salaried officials and clerks, recipients of pensions, and little investors living on interest and rent—of whom the latter group were hit especially hard by the government control of city rentals—were precisely the group most exposed to the evil consequences of cur-

⁵ Kemmerer, *op. cit.*, p. 300.

rency depreciation, while they lacked both the knowledge and opportunity to combat it. Their savings disappeared, their pensions and annuities melted away, and the sons who might have supported them had all too commonly been killed in the war. Hundreds of thousands of educated men and women, too old or feeble or untrained to earn their own living, were abruptly faced with starvation. Many died. The others, passing from day to day without hope, survived only by the sacrifice of treasured books, furniture, jewelry, and all their salable possessions, and at the end by . . . charity.⁶

Establishment of the New Mark

Even before the end of the inflation period, people sought some more stable measure of values or resorted to barter, as noted above. Contracts were made in terms of foreign currencies or in terms of commodities in many cases. In 1923 steps were taken to tie the mark to rye, making it redeemable in so much of the grain, or under other schemes in bonds of a proposed bank, such bonds in turn to be secured by mortgages on German property. Discussion of these plans led to the establishment of the *Rentenmark*, to be issued by a new *Rentenbank*, which became part of the Reichsbank. Property owners were taxed a capital levy, whereby they gave the *Rentenbank* liens on their property against which the bank issued mortgage bonds. The *Rentenmarks* were issued to the same amount as the bonds, and could be redeemed in bonds. Most important, however, the government was given a loan of new *Rentenmarks*, but was to cease completely any further borrowing. The *Rentenmarks* were receivable in payments to the government. The old marks were declared to be worth one trillionth of the new, and would be accepted at that rate. Hence, the stabilization was affected at the rate of a trillion to one.

The *Rentenmark* was a temporary expedient, however, and was designed to serve until the currency could be established on a gold basis again. This required international agreement because of the reparations question. The problem was to enable the German government to buy the foreign currencies necessary to pay reparations without forcing up exchange rates and losing such gold reserves as it might have. The Dawes Plan, a recommendation for altering the reparations arrangements, included plans for the reorganization of the Reichsbank and the restoration of the gold mark. The gold mark (*Reichsmark*) was adopted at the same ratio of one to a trillion old

⁶ J. W. Angell, *The Recovery of Germany*, Yale University Press, 1929, p. 38.

marks and was made redeemable in gold at the prewar rate. Reparations were set at a beginning figure of a billion gold marks per year, and were to rise to 2.5 billions per year in five years, with provision for taxes on transportation and industry to raise these sums. There was to be an American loan amounting to a billion marks for use in stabilizing German exchange rates. The Reichsbank, which was placed under the general direction of a Board consisting equally of Germans and foreigners, was required to maintain the gold standard and to have a reserve for its notes of at least 30% gold plus 10% in foreign exchange in gold currencies.

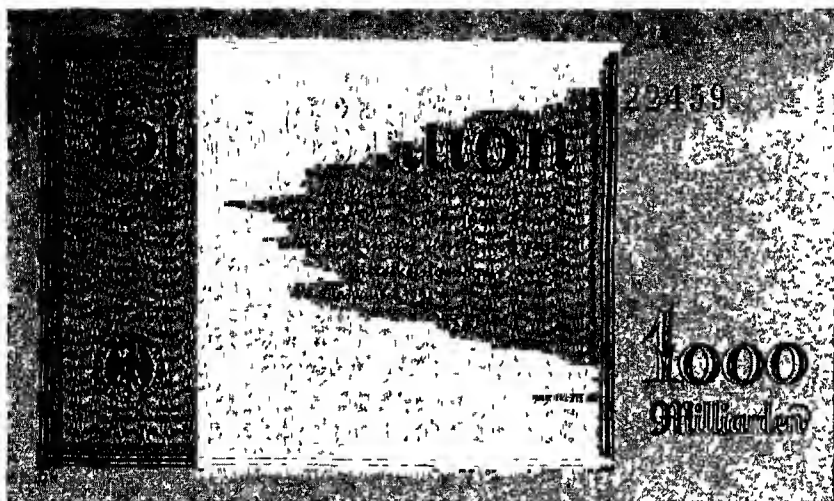


FIG. 31.—Reichsbank Note of the 1923 Inflation. This one-trillion mark note was issued by the Reichsbank in 1923. Prior to World War I it would have been worth about \$250,000,000,000. (Courtesy of the Chase National Bank. From the Chase National Bank Collection of Moneys of the World Reprinted by special permission of the Secretary of the Treasury. Further reproduction in whole or in part is strictly prohibited.)

From 1924 to 1931 the old exchange rate was maintained, but not with a free market. In other words, the new gold Reichsmark was the equivalent of the prewar mark of about 23.8 American cents. By restricting the demand for foreign exchange in Germany and by the use of more heavy loans of foreign money, the Germans managed to keep the supply and demand for marks balanced. Free redemption of marks into gold, however, did not again become possible

Summary

Monetary developments in England, France, and Germany have been summarized because of the importance of these developments to subsequent events, and because the three methods by which these countries solved their wartime inflation problems illustrate the nature of those problems. In all three countries fairly serious inflations were experienced during the war, owing to the rapid increase in the volume of money stemming from government borrowing at the respective central banks. England, for reasons peculiar to herself, determined to restore the gold redemption of the pound at the prewar figure, an operation which required deflationary measures in order to place the British price level in line with other gold-standard countries, principally the United States. On the other hand, France did not succeed in checking the wartime price rise and the further depreciation of the franc in terms of gold until several years later. Then France decided to adopt a new gold value more in line with the existing purchasing power of the franc; hence her re-establishment of the gold standard amounted to devaluation. In the case of Germany, the check to the decline in the value of the mark never did arrive, until, for all practical purposes, the mark was worthless. Then, since prices and debts had become meaningless, it was possible to establish a new mark with the same gold value as that of the prewar mark, with the result that the price level re-established itself in rough approximation to its prewar relationship to the American price level.

XXVI

THE BREAKDOWN OF THE INTERNATIONAL GOLD STANDARD

THE GOLD STANDARDS, three of which were described in the preceding chapter as having been restored with so much difficulty during the 1920's, provided the main trading countries of the world with an international monetary system only for a few years. The system of fixed exchange rates and gold shipments at fixed monetary values broke down generally in 1931. The reasons for this collapse provide considerable information concerning the nature and operation of the gold standard, and illustrate clearly several monetary principles involved in international finance.

The New Standard in London

As London provided the principal international money market of the world, at least prior to World War I, and because the restoration of the prewar gold pound was attempted partly to continue this leadership, we will consider first the monetary situation in England after 1925. It will be recalled that restoration of the prewar gold standard involved considerable difficulty for England, in that British goods were made relatively expensive to foreigners. This situation was true with respect to the United States because the restored ex-

change rate did not reflect the different rates of increase in prices in England and the United States, prices having risen further in England. Later, the same condition prevailed with respect to France and several other countries because of the low gold values of their new monetary units, compared to their prewar gold "contents."

Government Bills

Certain other developments had taken place in England as a result of the war which made the gold standard system a different arrangement than it had been in 1913. One development was the great decline in bills of exchange in London that naturally followed the decrease in foreign trade during the war. Previously investors, whether English or foreign, could purchase bills of exchange in order to have liquid and safe short-term investments. Banks held large quantities of them as secondary reserves as well as lending funds to bill brokers and dealers. In fact, it was these buyers and distributors who constituted the London money market and made possible the fact that so much of the world's trade was financed there. During the war the money market was filled with treasury bills as the government borrowed on short term. The continued existence of the government debt meant that government securities rather than acceptances were a major type of short-term investment. This meant further that the type of money market had changed, in that it was more common to leave funds as bank deposits than to invest them directly, so that the banks became the buyers of the treasury bills. Not only Englishmen but many foreign individuals and business firms and banks maintained London deposits after 1925. The restoration of the gold pound in that year had enabled those people who had transferred funds to other countries to return them in safety to England.

Gold Exchange Balances

Another important source of funds proved to be those other countries which had returned to gold by adopting the gold exchange standard. That is, their central banks were permitted to hold reserves not in gold itself but in claims to gold. It was noted in the last chapter that the reorganized Reichsbank could have part of its reserves consisting of 10% of its notes in the form of such gold exchange. It was common for such banks to buy bills drawn on London banks from exporters in

their countries and to acquire London bank deposits in this manner. They preferred to leave the deposits in London where they earned interest, which would be lost if gold were brought back.

Long-term Loans

The large volume of funds necessitating investment by London banks, tended to depress short-term money rates, particularly the yields on the treasury bills. Hence the banks began to turn to long-term loans by buying bonds of European governments and businesses, which wanted funds for construction and reconstruction. The net result of this development was that the London banks were liable for deposits which could be withdrawn immediately or on short notice, while their assets were largely long-term ones. This was a dangerous situation, and different from the prewar one, since any large withdrawal of funds to meet unfavorable trade balances or movements of funds to other countries would necessitate drastic liquidation by the banks. Also, the volume of funds which might be withdrawn was large in relation to the gold reserves of the Bank of England which would be demanded if the exchange rate went up to the gold export point, as it would tend to do if withdrawals led to demand for foreign exchange.

Other Factors

Other abnormal conditions in the money market were the reparation and interally war debts and the large volume of international loans. During the 1920's the United States government, banks, and citizens made unprecedented loans to similar units in Europe. These loans provided a large part of the dollars that were needed to pay for American exports and to meet war-debt payments. In fact, the net balance of all transactions was a greater demand for than supply of dollars, with the result that exchange rates in New York were usually at or near the gold import point. To some extent this was the result of American tariff policy, which made importation of goods difficult.

The "Dollar Standard"

The crucial role played by the American price level in the balancing of the various gold standards led some writers to call the interna-

tional gold standard of the 1920's the "Dollar Standard."¹ The shift of the United States during World War I from the position of a debtor country to that of the leading creditor country meant that gold would tend to flow to the United States as exchange rates adjusted themselves to the payments due Americans on these debts. The existence of other factors, such as an extension of new loans and a demand for foreign "invisible items," in the balance of payments, might, of course, offset this trend, but the underlying tendency was for gold to move to the United States.

Such being the case the values of other currencies were considerably affected by the value, or purchasing power, of the dollar. The gold which came to the United States to be converted for a certain number of dollars had cost a certain number of units of foreign money; it was used to pay debts or to purchase goods. If the amount of goods that could be bought at the American price level significantly exceeded the amount of goods that could be bought with the foreign money in foreign countries, the tendency for gold to come to the United States in payment for American exports would be increased. The American price level, in fact, was unusually stable during the 1920's, and this factor was a stabilizing influence on price levels abroad. If prices began to rise in a foreign country, that country tended to lose gold to the United States, and measures were taken to resist the rise there. The incoming gold had little effect on the American price level; in other words, the value of the dollar was not much affected. Through this process the values of the various foreign currencies tended to be held in the existing relationships to the value of the dollar, once equilibrium had been established. "The market for gold and the market for dollars became one and the same thing."² As has been pointed out above, the British experienced a deflationary situation throughout most of the 1920's because of the necessity for reducing their price level to its prewar relationship to the American price level if they were to re-establish and maintain the prewar exchange rate. This adjustment, of course, would have been much easier if the American price level had risen during the 1920's instead of falling slightly.

¹ R. G. Hawtrey, *The Gold Standard in Theory and Practice* (1927); F. Mlynarski, *Gold and Central Banks* (1929).

² Hawtrey, *op. cit.*, p. 92.

Gold Movements

Table 57 shows the net inflow of gold to the United States during the war period and the 1920's. Table 58 shows the flow of gold from England, France, and Germany to this country during the decade, 1920-1930. These tables do not show the total gold movements of

TABLE 57

GOLD INFLOW TO THE UNITED STATES,
1914-1930
(millions of dollars)

Year	Amount
July 1914 to	
December 1918	1,044
1919	— 164
1920	— 50
1921	686
1922	235
1923	295
1924	216
1925	— 102
1926	72
1927	— 154
1928	— 272
1929	120
1930	278

Source: *Banking and Monetary Statistics*, p. 538.

the three countries but only the gain or loss to the United States. However, they illustrate the tendency of England to lose gold through an unfavorable balance of trade and war debt payments, the flow of gold to France after the establishment of its gold standard at a "bargain" rate, and the flow of gold to Germany as the result of heavy loans in that direction. At the same time, England was collecting war debts from France (and others), both were collecting from Germany, and French exports were encouraged by the low value of the franc. The point is that all of these abnormal movements of funds balanced precariously, and the maintenance of the exchange rates depended upon their balancing, since most countries except the United States could not afford to lose large amounts of gold reserves.

TABLE 58

GOLD IMPORTS FROM ENGLAND, FRANCE, AND GERMANY, 1920-1930
(thousands of dollars)

Year	England	France	Germany
1920	280,754	31,193	— 2
1921	202,091	190,666	19,927
1922	121,862	27,043	35
1923	149,534	16,376	49,552
1924	118,645	24,346	—15,171
1925	43,135	5,267	—68,269
1926	1,212	333	—47,548
1927	30,833	11,048	—13,993
1928	4,999	—307,848	—28,759
1929	41,310	— 65,179	44,389
1930	— 275	— 73,675	— 174

Source: *Banking and Monetary Statistics*, pp. 539-540.

The American tariff has been mentioned. High tariffs in this country resulted from protectionist sentiment and the common belief that they were essential to high wages. They culminated in the very high Smoot-Hawley Tariff of 1930. This is not an appropriate place to discuss tariff theory, but it suffices to say that the United States, by limiting imports, restricted the amount of funds that foreigners might have obtained to pay their various debts to Americans. In other countries tariffs became more common during the 1920's, partly from simple protectionist reasoning, and partly from necessity. At least, tariffs appeared necessary on the assumption that the countries involved wanted to maintain the gold standard. Since in many countries the demand for foreign exchange exceeded the supply, a tendency arose to reduce this demand by a reduction in imports. In this way, each country tried to protect its gold reserves. Naturally, this made it harder for all the other countries to maintain theirs; the restriction of imports by other nations, for example, still further reduced British exports, and increased the movement of gold away from England.

Under the circumstances, it is not surprising, in retrospect, that this precarious system gave way. Various things happened to upset the balances required. The stock-market crash in the United States dried up the source of foreign loans. Growing business depression

upset export-import relationships in different countries. Political upsets and unstable governments led to fears as to the stability of their currency among those who had seen violent inflations a few years before.

Among the earliest countries to be affected were those that exported raw materials in large volume, such as Brazil, Argentina, and Australia. Raw materials prices declined severely as a result of industrial depression in manufacturing countries, with the result that the value of exports in countries like Australia fell appreciably. This upset the supply-demand relationship in the foreign exchange market, as imports did not automatically decline in proportion. The result was that exchange rates there reached the gold export point, and Australia lost gold reserves and reserve balances that had been maintained in London. The loss of gold reserves from the banks required restriction of lending and investing, so that strong deflationary pressure was set up. Australia attempted to maintain the gold value of its pound by pegging operations, by mobilizing gold reserves, by restricting and prohibiting imports, and by exchange control measures designed to parcel out the available British pounds. These measures held the depreciation of the pound to small amounts until 1931, but at that time pegging operations had to be given up because of lack of gold.

World-Wide Breakdown

World-wide collapse came in 1931, following bank failures in Austria. The Reichsbank made loans to the leading bank of Austria, the *Creditanstalt*, and when these did not prevent Austria from leaving the gold standard, fears were raised that the Reichsbank could not get back its funds, which were needed to protect its gold standard. This fear induced withdrawals from Germany to such an extent that the Reichsbank did greatly restrict gold redemption. The failure of the Bank of England to withdraw in time funds at its command in Germany led to similar fears concerning the English gold standard. The international deposits mentioned above, as well as funds of Britishers, were transferred to France and the United States, where prospects seemed safer. As explained above, British assets consisted largely of long-term loans, which could not readily be exchanged for cash, and the drain of gold through the unfavorable exchanges led

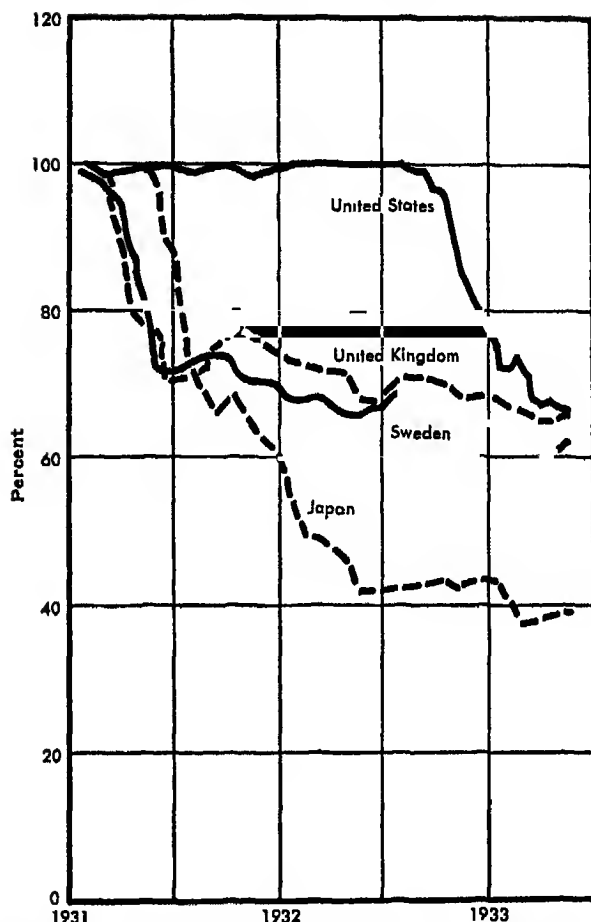


FIG. 32.—Ratios of Depreciated Currencies to Gold Parities, Mid-1931-1933.

the Bank of England to suspend gold payments. An attempt was made to provide the necessary gold and foreign exchange through loans from France and the United States, but it was not successful. Suspension was started on September 21, 1931, and the foreign exchange value of the pound dropped sharply. This reflected the great demand for other currencies in terms of pounds, although speculative selling of pounds exaggerated the decline. Monthly averages of daily rates in New York were :⁸

⁸ *Banking and Monetary Statistics*, p. 681.

July	\$4.856
August	4.857
September	4.531
October	3.889
November	3.719
December	3.373

The United States

Turning to the results of these developments in the United States, we find them intermingled with those taking place as a result of the stock-market crash in 1929 and the business depression which followed. The loss of gold by other countries through unfavorable trade balances and the movement of funds during 1930 and 1931 meant a gain of gold for the United States. The gold stock, consisting of gold in circulation, in the Treasury, and in the reserve banks, was 4 billions at the end of 1929, 4.3 billions at the end of 1930 and 4.1 billions a year later. During the summer of 1931, while England and others were experiencing drains, the high point of 4.7 billions was reached.

The 1931 Drain

Immediately following suspension by England, the same sort of drain developed in the United States; it was met successfully, at least for a time. During a period of six weeks an unprecedented loss of over \$700,000,000 of gold was occasioned by export and earmarking. A great part went to the Bank of France, which decided to convert its large dollar balances to gold. Dutch, Belgian, and Swiss banks acted similarly. In addition there was another wave of hoarding, partly of gold and partly of other currency, but in any event a drain on bank reserves. As the drain was met, however, by extension of Federal reserve bank credit, it appeared that the gold standard would not fall. In fact, world-wide confidence in the dollar grew so that funds were sent here again and the gold stock increased somewhat.

Suspension of Gold Payments

A second run on gold developed in the spring of 1932. This, also, appeared to be successfully met for a while. Rising sentiment in favor of inflationary measures to resist the depression had appeared in public and in Congress, which led to international doubts concerning

the future of the dollar. The central banks of the same four countries mentioned above again converted dollar balances to gold, but open-market purchases by the reserve banks, which had sufficient gold reserves, provided the banks with reserves. Nevertheless, late in the year bank failures again began to rise. Many banks had already been weakened by liquidation of assets and were vulnerable to further withdrawals. A contributing factor was the publicity given to loans from the Reconstruction Finance Corporation to individual banks. As described in Chapter XI, failures led to widespread state bank holidays and finally to a national bank holiday in March, 1933.

Part of the arrangement whereby the banks were closed temporarily was a ban on the trading in and exporting of gold. In other words, the United States suspended the gold standard at that time. As described below, general opinion considered this a temporary measure which would be lifted as soon as the banking muddle was solved. However, the Roosevelt administration adopted a "reflationary" policy which was counter to the restoration of the exchange rates in existence prior to March. The devaluations of the other countries had contributed to the deflation and depression in the United States, in that the high value of the dollar had impeded exports and payments to Americans of foreign debts and interest. The banking difficulties had stemmed partly from loss of gold, and the loss of reserves through gold exports and hoarding had intensified the banks' unwillingness to lend and invest. Hence the government decided that the retention of the gold standard had been a deflationary influence which should be removed by suspension of free dealing in gold at a fixed price.

Bank Failures and the Standard

The wave of bank failures during the period now under discussion was described at the end of Chapter XI. These failures were interrelated with the problem of the standard, in that a large part of the hoarding was done through the withdrawal of gold, and because the decline of the gold reserves of the reserve banks limited their ability to extend additional reserve balances through open-market operations, as well as their ability to provide the Federal reserve notes that were being withdrawn into circulation (hoarding).

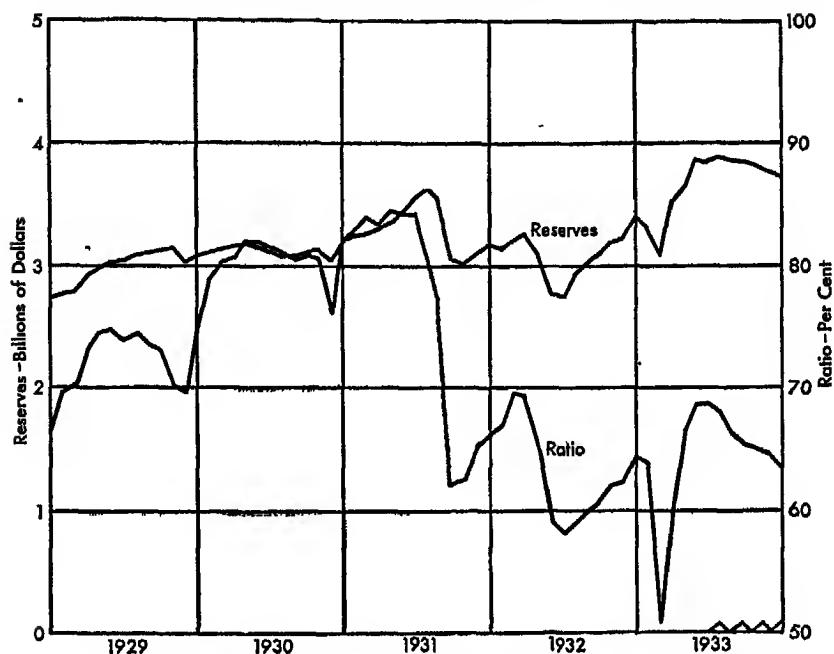


FIG. 33.—Gold Reserves and Reserve Ratio of Federal Reserve Banks, 1929–1933. (*Banking and Monetary Statistics*)

The gold reserves of the reserve banks and the combined reserve ratio of the reserve banks are shown in Figure 33. It is apparent that the withdrawal of Federal reserve notes would not cause a reduction of the reserve ratio, since the withdrawals would merely substitute note liabilities for deposit liabilities. While this is true, the credit-extending powers of the reserve banks were nevertheless limited because (1) the notes required a 40% reserve instead of 35%, which is a relatively unimportant reason, and (2) the lack of eligible paper to be used as collateral for the Federal reserve notes required the reserve banks to use gold instead. In other words, instead of using 40% gold and 60% commercial paper, they had to use a higher percentage of gold and a lower percentage of eligible paper.

At the time of the initial difficulties in the United States in the fall of 1929, when the great liquidation started with the calling of a tremendous volume of brokers' loans on the part of banks in the interior and other lenders, the Federal Reserve Bank of New York purchased

securities in the open market in order to provide the New York banks with reserves, so that they, in turn, could take over the brokers' loans. In addition, the rediscount rate on eligible paper was lowered from 5% to 4½% and then by successive ½% decreases to 2% by the end of 1930.⁴ To help the banks meet the drain of reserves into circulation during 1931, the rediscount rate was lowered still further to 1½%, while the buying rate on bankers' acceptances went down to 1%.

At this point, the reserve banks themselves began to feel the shortage of their own reserves, and their credit policy was tightened. Rediscount rates were raised to 3½% at most reserve banks, and the buying rate on bankers' acceptances at the New York bank was raised to over 3%. Still, it was necessary for the commercial banks to rediscount and sell acceptances (if they still had any), in order to withdraw more currency from the reserve banks. Rediscounts increased from about \$250,000,000 in September to approximately \$850,000,000 at the end of 1931. The volume of acceptances held by the reserve banks rose from less than \$70,000,000 in July to over \$700,000,000 in October. When the wave of hoarding, liquidation, and failures overtook the system in the spring of 1933, there was little the reserve banks could do.

Emergency Legislation

In 1932 the scarcity of eligible paper and the consequent difficulties in the issuance of Federal reserve notes led to the passage of the Glass-Steagall Act, which allowed, as an emergency measure, use of government securities purchased in the open market as collateral for Federal reserve notes. The use of such collateral released the gold so used in excess of the 40% minimum, and permitted some expansion in open-market operations.

Following the bank closings of March, 1933, Congress hurriedly passed the Emergency Banking Act of 1933. Briefly, the act provided as follows:

1. Authorized the President to forbid hoarding or exporting gold.
2. Provided "conservators," similar to receivers, for closed banks.
3. Permitted banks to issue and sell to the Reconstruction Finance Corporation 6% preferred stock, in order to raise additional capital.

⁴ A chart showing changes in the rediscount rate appears on page 271.

4. Altered the note issue of the reserve banks so that notes might be secured by government bonds up to 100% of their value or by eligible paper up to 90% of its value, thus relieving the reserve banks of maintaining a gold reserve.

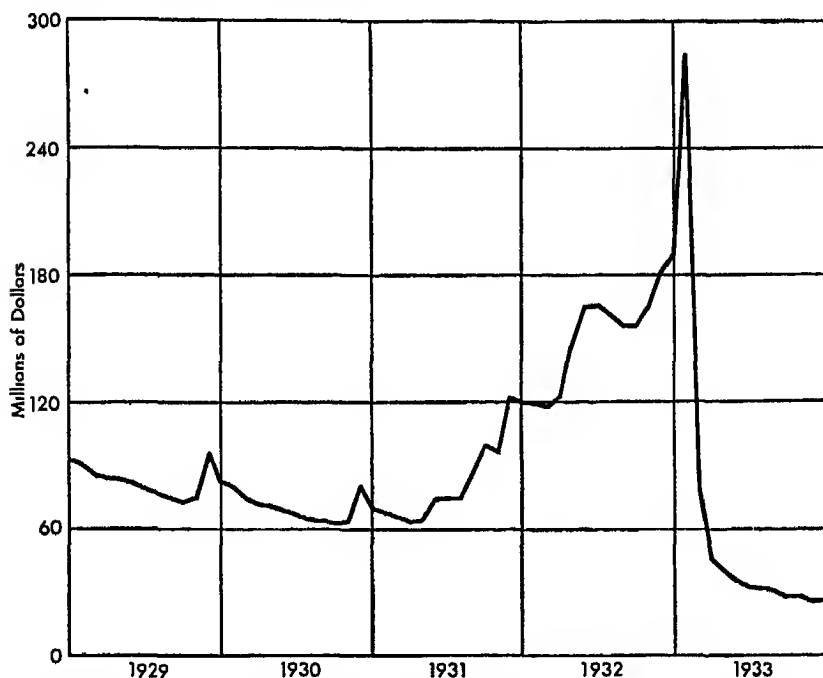


FIG. 34.—Gold Coin in Circulation, 1929-1933. (*Banking and Monetary Statistics*)

This last provision was a re-use of the Federal reserve bank notes (not Federal reserve notes) which originally were to take the place of national bank notes after the establishment of the Federal Reserve System. Like the national bank notes, they were originally bond-secured currency. The Federal reserve notes had provided such a satisfactory currency, however, that the Federal reserve bank notes had been allowed virtually to disappear.

In a few days, during which banks were hurriedly examined, licenses were granted the sound ones to reopen, and conservators were appointed for the others. If a bank had enough eligible paper or otherwise acceptable sound assets to obtain sufficient funds to meet its deposits from the reserve bank of its district, it was deemed sound.

By the middle of March about 90% of the country's bank deposits were available again in open banks. The conservators of the remaining banks were to rehabilitate them and put them in condition for reopening if possible. Otherwise, they were to reorganize or liquidate the banks. If sufficient stockholders and depositors agreed, deposits were scaled down and the banks reopened, or other arrangements might be made, like merging a closed bank with a sound one. In the remaining instances, the assets were liquidated, and the proceeds turned over to the depositors. Before the end of the month, more than \$1,000,000,000 came out of hoarding and circulation to be deposited in the banks. This inflow of currency made unnecessary the use of the new reserve bank notes, and permitted the banks to reduce their reserve bank indebtedness, as well as to build up their reserves.

The Gold Bloc

Suspension in the United States still left one important group of countries on the gold standard, the so-called "gold bloc" of France, Belgium, Switzerland, the Netherlands, Luxemburg, and Italy. These countries decided to maintain the gold values of their currencies. The high values of their currencies in terms of other moneys, however, kept them under constant deflationary pressure; there was constant uncertainty about how long they would carry on in the face of falling prices and rising unemployment. Speculative rumors developed concerning the Belgian situation, and runs on belgas eventually required a devaluation in March, 1935. Probably as a result of their experience with inflationary money during the 1920's, the French stubbornly resisted devaluation of the franc or abandonment of the gold standard, until in September, 1936, a "Tripartite Agreement" was made between France, England, and the United States. Under the terms of this agreement, France was to devalue the franc to a new gold value consonant with the purchasing power of the franc as compared to the pound and the dollar, and the three countries were to cooperate to stabilize exchange rates at the new levels by use of stabilization funds.

A brief tabulation of exchange rates of the franc and pound, in terms of the dollar and in terms of each other, will serve to illustrate

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the changing values of money in international trade during the years that the gold standard was breaking down and new arrangements were being made.

TABLE 59

RELATIVE VALUES OF DOLLARS, POUNDS, AND FRANCS,
1930-1937
(end of month)

	Pounds, in Cents	Franco, in Cents	Pounds, in Francs
June 1930	485.86	3.92	123.94
Jan. 1931	485.46	3.92	123.69
June 1931	486.48	3.91	124.52
Sept. 1931	453.12	3.92	115.72
Dec. 1931	337.37	3.92	86.06
June 1932	364.66	3.93	92.79
Dec. 1932	327.86	3.90	84.06
June 1933	413.55	4.80	86.15
Dec. 1933	511.58	6.12	83.59
June 1934	504.80	6.59	76.60
June 1935	493.49	6.61	74.65
June 1936	501.92	6.59	76.16
Sept. 1936	503.62	6.34	79.43
Oct. 1936	489.84	4.66	105.11

Source: *Banking and Monetary Statistics*, pp. 670, 681. Pound-franc ratio calculated

Developments Off the Gold Standard

The bank holiday in March, 1933, was accompanied by presidential prohibitions against dealing in gold. After the Emergency Banking Act was passed on March 9, these prohibitions had firm legislative foundation, and were extended. It became illegal for banks to pay out gold, or for gold to be exported. The public was requested to return hoarded gold to the banks. The next month the President proclaimed an antihoarding order, making it illegal for anyone to own gold, with such exceptions as for recognized collectors' coins, gold in use in the arts, and a general \$100 exemption. Gold was to be returned to the banks, paid for with other money, and forwarded to the reserve banks. Also, an embargo was laid on the export of gold,

again with necessary exceptions, such as that gold could be obtained for international trading purposes by permission of the Secretary of the Treasury, foreign-owned gold could be withdrawn, and the like.

Gold Embargo

Previous to the embargo it had been generally understood that restrictions on dealings in gold were temporary. It was thought that the country would restore redemption and the gold standard, and that the foregoing measures were designed to concentrate gold in the reserves of the reserve banks, somewhat as England did prior to resumption in 1925. Announcements by government officials had indicated that this was the case. However, the embargo showed that the gold standard was not to be restored in the near future, at least at the old gold content. It would have been possible, apparently, to restore the standard, as several conditions were favorable to such a course. The United States was a creditor nation, a fact which caused funds to flow in as interest payments. Gold reserves, after the measures mentioned above, were large. In addition, foreign balances had been largely liquidated in 1931 and just prior to March, 1933, so that further great withdrawals were unlikely.

Thomas Amendment

On the other hand, opposition to the old gold content arose from the fact that it would make other currencies relatively undervalued and restrict American exports. Prices of farm products had fallen more severely than other prices during the depression, and they depended upon exports for support. The President in May announced that he proposed to restore the fallen price level and to attempt the management of it in the future by: "raising commodity prices to such an extent that those who have borrowed money will, on the average, be able to repay that money in the same kind of dollar which they borrowed." Congress also, in May, showed tendencies toward inflation by passing the Thomas Amendment to the Agricultural Adjustment Act. This law directed the Treasury to negotiate with the reserve banks for the open-market purchase of \$3,000,000,000 of government bonds. If the reserve banks failed to do this, or if the Treasury considered it necessary in addition, the Treasury was authorized to issue a like amount of greenbacks (United States

notes). The greenbacks were to be used to retire the government debt or pay interest on it, and they in turn were to be retired at a rate of 4% per year. This provision was not utilized, and eventually was repealed in June, 1945.

In addition, the act gave the President power to devalue (reduce the gold content of) the dollar by not more than 50%, and to establish a new weight for the silver dollar in accordance with any change made in the gold dollar. Finally, countries owing the United States war debts could pay them in silver at a value of 50 cents per ounce. As this valuation was above the world price, it encouraged several countries to meet some of their payments in this way, and it also created a demand for silver as a commodity. The actions taken under the gold and silver powers are discussed below.

Gold-Clause Cases

Two developments took place the next month, June. One was the abrogation of the "gold clause" in contracts. After the inflation of the Civil War period, it became common for long-term bonds to contain clauses that the principal would be repaid in dollars "of the same weight and fineness" as was in effect at the time the bonds were issued. Often, interest payments were covered by the clause, too. In other words, the debtors were bound to repay 23.22 grains of fine gold per dollar, or their market price, regardless of what the dollar might be in the future. With the United States off the gold standard and the world price of gold much higher than the mint price of \$20.67 per ounce, the gold clauses might have been very burdensome. The price of gold became such that it would have taken \$1.69 to purchase 23.22 grains of gold—in other words the price rose 69% in terms of dollars—so that all such debts would have been that much heavier.

Test cases were brought before the Supreme Court, including suits brought by holders of railroad bonds, government bonds, and gold certificates.⁵ The Supreme Court ruled,⁶ in the case of private debts, that Congress had the right to abrogate the gold clauses, as it had done by declaring that they were contrary to the public interest and not enforceable. The right stemmed from the constitutional

⁵ *Norman v. The Baltimore and Ohio Railroad Co.* 293 U.S. 546, *United States v. The Bankers Trust Co.* 293 U.S. 548, *Perry v. United States* 294 U.S. 530, and *Nortz v. United States* 294 U.S. 317.

⁶ The decisions were reached in 1935.

authority to "coin money and regulate the value thereof." Creditors of private individuals, corporations, municipalities, and states, therefore, could not insist upon payment in dollars of the old gold content. In the case of obligations of the Federal government, the Court decided that Congress could not break the government's contract embodied in the gold clause. However, the bondholders had not claimed any damages resulting from their inability to obtain gold, and the Court said they could show none. The argument was that prices generally had not risen along with the price of gold, and that the bondholders were not injured by being repaid in nongold dollars. The ruling was that such bondholders could sue only for their damages.

Following this decision, Congress nonsuited further gold-clause cases. That is, a resolution was passed whereby the government refused to allow itself to be sued for such damages. Much bitter criticism was leveled at the government for this action, stemming from the "sanctity of contracts." The Supreme Court itself appeared to be somewhat unhappy about its decision allowing the government to disregard its own gold clause. However, it was apparent that great damage would be done if business corporations, already hard pressed by debt payments, were required to add 69% to existing debts and interest charges. It would also be difficult to justify the payment to government bondholders, only, of a bonus of two-thirds of their holdings.

XXVII

THE REVISED MONETARY SYSTEM

THE EVENTS described in the preceding chapter flow naturally into those that culminated in the adoption of a new gold standard in 1934. The dividing line, however, is drawn at the World Monetary and Economic Conference, held in June, 1933, because that conference provided indisputable evidence that it was not the policy of the United States to re-establish the gold standard that had just broken down. This chapter will describe the new gold standard and the place of silver in the monetary system.

Steps Preceding Revision

Consequently, the developments that took place during the summer of 1933 should be considered among the various steps taken by the government preceding the adoption of a new gold standard. In addition there should be mentioned the London Conference, banking policy, and other recovery measures which were beginning to take form during the summer of 1933.

World Monetary and Economic Conference

This conference had been arranged in 1932 with the idea of finding means whereby the various nations could agree to eliminate succes-

sive devaluations and set up new gold standards with resulting fixed exchange rates. It was hoped that fixed exchange rates would provide stability upon which international trade could revive. The issue before the conference, which was held in London, reduced itself to a choice of two conflicting courses of action: an attempt to restore prosperity at home by government spending, a policy of "reflation" through easy money; or an attempt to balance the budget through heavier taxation and economy, to reduce barriers to trade, and to maintain gold redemption. Those countries with a large proportion of foreign trade tended to lean towards the latter view, while those to whom foreign trade was much less important than domestic trade leaned towards the former.

The Roosevelt administration by this time was committed to a course that would raise domestic prices and create employment. Restoration of the gold standard did not fit into this policy. The government wanted to be free to spend, borrow, and inflate as necessity arose, but such freedom might have been impossible if at the same time gold reserves had limited the expansion of the bank credit available to the government. Certain other countries, such as France, preferred the conservative policy of stabilizing the currency and reducing expenditures, with the result that no general agreement was possible.¹

Banking Policy

Turning to banking policy during this period, we find the reserve banks following a policy of easy money in conformity with the general course of the government. Between the spring and fall of 1933 open-market purchases followed a systematic plan and amounted to approximately \$600,000,000. This, along with the return of hoarded currency, provided the banks with new reserves, a large part of which they liquidated in repaying Federal reserve bank credit. The result was easier money and low rates in the money market. The reserve banks reduced their rediscount rates accordingly, the rate in New York reaching $1\frac{1}{2}\%$. However, rediscounting was small as a result of the adequate reserves.

¹ The theory of these two positions with regard to monetary measures appropriate to stimulate a recovery from depression is discussed in Chapter XXXV.

Other Measures

Other, nonfinancial, measures by the government should be mentioned as part of the attempt to raise prices and increase business activity. One measure was the National Recovery Administration, which attempted to stop falling prices by eliminating price cutting in industry and also to hold up consumer purchases by stabilizing wage rates. Another was the Agricultural Adjustment Administration, which attempted to raise farm prices by paying benefits to farmers who reduced output, the funds coming from special taxes on the processors of farm products. Prices did rise during the summer of 1933, but it is impossible to say what credit should be attributed to the monetary measures and what to the others. Even the weather contributed, as crop yields were lower than usual, a fact which tended to raise agricultural prices.

The Gold Purchase Program

In the meantime, the world price of gold was considerably higher than the mint price established by the Gold Standard Act of 1900. In other words, the dollar had fallen on the exchanges so that to buy either foreign gold currencies or gold itself in foreign countries one would need more than \$20.67 for an ounce of gold or its equivalent in foreign exchange. American gold miners naturally did not wish to sell their newly mined gold to the United States mints when they could get appreciably more dollars by selling abroad. This they were prevented from doing by the gold embargo, so there developed a tendency to export the ore itself to Canada. Gold smelted there could be exported to London, and the pounds used to buy dollars. This situation led to an arrangement whereby the government allowed mining companies to sell their gold in the United States to industrial users, through the reserve banks, at the prevailing world price of about \$28.00 an ounce.

Objectives

In October, the government was prepared to move towards its objective of a managed currency designed to restore and control the price level. The President announced that:

The object has been the attainment of such a level as will enable agriculture and industry once more to give work to the unemployed. It has been to make possible the payment of public and private debts more nearly at the price level at which they were incurred. It has been gradually to restore a balance in the price structure so that farmers may exchange their products for the products of industry on a fairer exchange basis. It has been and is also the purpose to prevent prices rising beyond the point necessary to attain these ends.

Because of conditions in this country and because of events beyond our control in other parts of the world, it becomes increasingly important to develop and apply the further measures which may be necessary from time to time to control the gold value of our own dollar at home. Our dollar is now altogether too greatly influenced by the accidents of international trade, by the internal policies of other nations and by political disturbances in other countries.

. . . I am going to establish a Government market for gold in the United States. . . . I am authorizing the Reconstruction Finance Corporation to buy gold newly mined in the United States at prices to be determined from time to time after consultation with the Secretary of the Treasury and the President. Whenever necessary to the end in view, we shall also buy or sell gold in the world market.

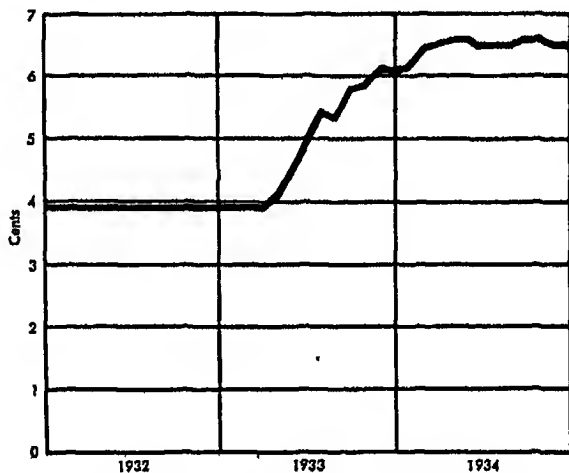


FIG. 35.—Price of French Franc, 1932-1934.

This policy was designed to establish a new relationship between the dollar and gold, whereby the dollar would be worth less in terms of gold than it had been. Two lines of thought led the government to this course. One has been mentioned, namely, the alteration of exchange rates through alteration of the price of gold. The old exchange rate on London of \$4.86 had existed because the pound

would buy 4.86 times as much gold as would the dollar, and gold was convertible into either money. If the price of gold went up in London and New York equally, the pound would still buy 4.86 times as much as the dollar. The current cheapness of the pound following the British depreciation of 1931, then, could be overcome by raising the price of gold in terms of dollars. Although England was "off gold" the London market for gold and for foreign currencies would thus establish a new pound-dollar ratio. In a similar vein, in the future any given volume of gold reserves might be defined as a larger number of dollars, an action which would make possible greater credit extension by the banking system.

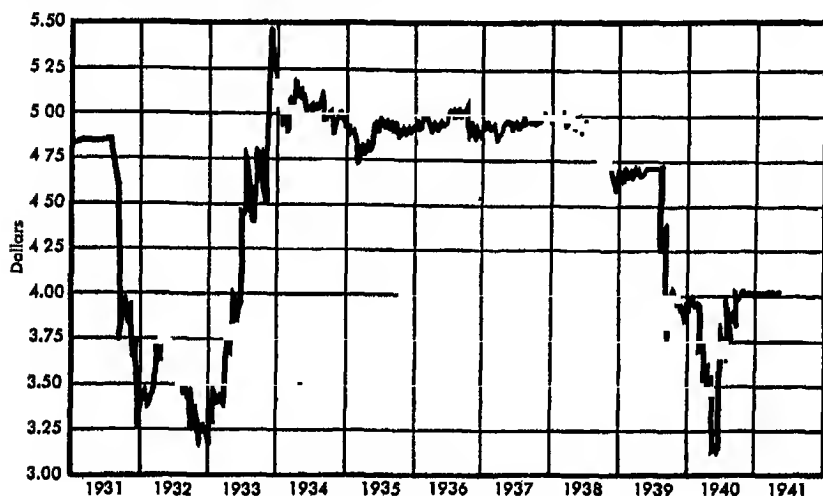


FIG. 36.—Price of Pound Sterling, 1931-1941.

The second line of thought was attributed to some of the President's advisers, particularly to Prof. George F. Warren. It was believed by some that if the price of gold were increased the price of everything else would tend to rise proportionately. This reasoning is discussed in the chapters on the value of money, but must be described at this point to explain the purposes of the American devaluation. It is based partly on the assumption that if, for example, one dollar is equal in value to 24 grains of gold and both of these are equal in value to a bushel of potatoes, the reduction in the value of the dollar to half as much gold "should" reduce its value to half a

bushel of potatoes—the price of potatoes should rise to \$2.00, owing to the interrelationships of the values of the three things. This reasoning is also based partly on the fact that if each dollar “contains” less gold there will be more dollars; gold reserves support more credit money and prices again should tend to rise.

Purchases

The Reconstruction Finance Corporation began purchases of gold on October 5, 1933, at a price of \$31.36 an ounce, an increase of \$1.56 above the price at which gold had sold in world markets just previously. The price was raised nearly every day until December, a few cents at a time. On December 1, the price was \$34.01 and at the end of January, 1934, the final price of \$35.00 was announced.² The rising price of gold was accompanied by correspondingly rising prices for foreign currencies redeemable into gold. Other, nongold, foreign currencies would rise on the exchanges as well because they could be used to buy gold in other countries at prevailing market prices. At the same time, speculation in both these types of currencies would reflect anticipated gold prices. Average daily rates for the pound and franc were:

	<i>Pound</i>	<i>Franc</i>
Sept.	466.47 [¢]	5.77 [¢]
Oct.	466.82	5.81
Nov.	514.97	5.26
Dec.	511.58	6.12
Jan.	504.93	6.21

Devaluation

The price raising was stopped at the round figure of \$35.00 an ounce. At this price, the dollar was the equivalent of $15\frac{5}{21}$ grains of gold $\frac{9}{10}$ ths fine, or 13.71 grains of pure gold, which represented a reduction to 59.06% of the former gold value.³ It will be noted that the Thomas Amendment had given the President power to reduce the gold content by as much as 50%. Just why the new gold content

² Sales were not necessarily made at each price, as holders of gold might well be inclined to wait to see whether higher prices might be forthcoming.

³ In other words, the old mint price was to the new mint price as the new weight was to the old—\$20.67: \$35.00 = 13.71: 23.22.

was chosen is not clear unless one assumes that the choice was made because the Bureau of Labor Statistics index of wholesale prices had declined to 59% of its 1926 level. It is difficult to believe that anyone actually concluded that a reduction of the gold content virtually by the same proportion would result in restoring exactly the 1926 price level, but that figure may have been considered as good a bench mark as any other, and it did yield the conveniently round figure of \$35.00 for the gold price. As a matter of fact, later events indicated that the dollar was undervalued in terms of its purchasing power by this new parity with gold, as described below.

The Gold Reserve Act

When the price of gold had reached \$35.00, the Gold Reserve Act of 1934 was passed to replace the Gold Standard Act of 1900. This act set up a dollar tied to gold through government management, rather than with free redemption and circulation of gold. In the first place, gold was nationalized; title to all gold was taken over by the government and paid for in other money at \$20.67 per ounce. The government gave the reserve banks gold certificates in exchange for the gold that had been concentrated in reserve bank reserves, and the existing reserve requirements of the Federal reserve notes were changed to gold certificates rather than gold. Reserve requirements for reserve bank deposits were changed to "lawful money." The old ratios of 40% and 35% were kept.⁴ At the same time, the gold reserves held for Treasury notes and greenbacks were changed to gold bullion. The act forbade the coinage of gold, but instead provided that the Secretary of the Treasury could sell gold bars, or buy gold, at his discretion. The President was given the authority to change the weight of the gold dollar between the limits of 50% and 60% of the old weight; practically speaking, he could reduce the gold content another 9% (since it was then 59.06%), which would make the mint price \$41.34. The \$35.00 price, however, was maintained.

⁴ One confusing result of this legislation was the problem of defining "lawful money." Apparently the law could be interpreted to mean that the reserve banks could use their own Federal reserve notes as reserves for their deposits. As such was not the intention, the question was settled by a revision in 1945, discussed in the next chapter, changing all requirements to gold certificates.

The Gold Profit

An immediate result was the gold profit resulting from the new valuation placed on gold. At \$35 an ounce rather than \$20.67, the gold taken over or previously owned by the government was worth \$2,800,000,000 more than it had been before.⁵ The Gold Reserve Act stipulated that \$2,000,000,000 of this was to be set aside as the Exchange Stabilization Fund.

This fund was an important feature of the new standard. It was to be used to control short-term movements of the exchange rates due to movements of balances from one money center to another, a situation which had been so disturbing in 1931. The fund was to act as a buffer to prevent these movements from causing gold to leave the central bank reserves of one country for another, which had tended to restrict credit in the one, and, subject to management, expand it in the other.

Gold Imports

It was mentioned above that the new dollar appeared to be undervalued, and that this was indicated by the developments during the rest of the 1930's. During these years there was an unprecedented flow of gold to the United States. The result of devaluation is to make a nation's monetary unit cheap, so that exports increase and gold flows in. In the case of the United States, however, net commodity exports as such did not increase; in fact, merchandise imports exceeded merchandise exports during most of 1936, following the establishment at the new dollar. Instead, there was a large export of securities. The Board of Governors estimated that over 1.5 billion dollars were spent by foreigners to buy securities in this country from the beginning of 1935 to the end of September, 1937. In addition, funds again began to come to America for safekeeping. Political difficulties which were to culminate in World War II created uncertainties in European countries as to future monetary values; the dollar seemed to be the safest of all moneys. Somewhat more funds came to this country merely to be left as bank deposits than came for the purchase of securities. Thus, in less than two years, these *capital*

⁵ The arithmetic of the change in the gold stock as it affects bank reserves was explained in Chapter XVIII.

movements amounted to over \$3,000,000,000. Thus it cannot be concluded that the dollar was seriously undervalued when measured by price levels and the movement of goods, but the cheapness of the dollar did make American goods that much cheaper to foreigners and also encouraged investment in the United States.

TABLE 60

NET CAPITAL MOVEMENT TO
THE UNITED STATES

CUMULATIVE FROM JAN. 2, 1935 TO DEC. 31, 1941

(in millions of dollars)

Increase from Jan. 2, 1935 to—	Foreign Banking Funds	Decrease in U.S. Banking Funds Abroad	Foreign Funds for Domestic Securities	Total Movement, Including all other Transfers
July 3, 1935	213.8	312.8	15.8	616.0
Dec. 25, 1935	630.4	356.4	302.7	1,419.2
July 1, 1936	779.0	449.0	524.1	1,949.2
Dec. 30, 1936	930.5	431.5	917.4	2,608.4
July 7, 1937	1,673.5	457.0	1,065.7	3,614.8
Dec. 29, 1937	1,168.5	449.1	1,162.0	3,410.3
July 6, 1938	765.9	426.1	1,161.3	3,038.1
Dec. 28, 1938	1,425.4	510.1	1,219.7	3,844.5
July 5, 1939	2,112.9	608.0	1,205.8	4,681.2
Dec. 27, 1939	2,464.4	612.8	1,129.6	5,005.0
July 3, 1940	2,830.1	684.1	1,042.1	5,440.7
Dec. 25, 1940	3,160.9	771.6	896.3	5,733.0
July 2, 1941	3,193.3	818.6	631.2	5,575.4
Dec. 31, 1941	2,856.2	791.3	626.7	5,230.7

Source. *Banking and Monetary Statistics*, pp. 598-601.

Table 60 does not show all of the capital movements, but only three for illustration. Further making up the total of over five billions of dollars by the end of 1941 were the return of American funds previously invested in foreign securities (\$855.5 million), and the inflow in brokerage balances (\$100.9 million). At first the foreign banking funds were mostly of banks other than central banks. To the end of 1937, for example, central bank funds in New York City had increased by \$234,900,000, while other bank funds had increased by nearly a billion. As time went on, foreign central banks

acquired more American balances in New York, until they reached nearly a billion and a half dollars.

These funds came from various countries as shown below in Table 61.

Results of Gold Imports

The results of this movement of funds included: a corresponding flow of gold to the United States, benefits to gold producing countries, pressure on the gold bloc countries, and a great increase in bank reserves in the United States, with a concomitant tendency to inflation. Table 62 shows the net gold inflow and the factors influencing it. To some extent, it is a repetition of the figures cited above concerning capital movements, but it combines them with balances due for merchandise and services and the import of silver.

TABLE 61

SOURCES OF FUNDS COMING TO UNITED STATES,
CUMULATIVE FROM JAN. 2, 1935
(in millions of dollars)

Source	Jan. 2, 1935 to Dec. 29, 1937	Jan. 2, 1935 to Dec. 31, 1941
United Kingdom	993.8	674.1
France	281.7	639.9
Netherlands	311.9	464.4
Switzerland	607.5	725.7
Germany	123.9	179.9
Italy	22.1	50.5
Other Europe	312.2	891.8
(Total Europe)	(2,653.0)	(3,626.3)
Canada	106.3	340.5
Latin America	410.6	567.5
Far East	224.6	567.7
All other	15.9	128.6
Total	3,410.3	5,230.7

Source: *Banking and Monetary Statistics*, pp. 603-607.

Needless to say, the change whereby gold producers, whether domestic or foreign, could sell an ounce of gold for \$35 rather than \$20.67 was of great benefit to them.⁶ Foreign producers could pur-

⁶ To be precise, the Treasury, when buying gold, made a charge for handling of 1/4th of 1%.

chase either many more American goods or more units of other money, how many more depending upon how exchange rates had reacted. Gold mining profits were excellent, and business activity in such places as the Union of South Africa improved.

TABLE 62

GOLD INFLOW TO THE UNITED STATES AND
CONTRIBUTING FACTORS,
1935-1940
(millions of dollars)

Year	Gold Stock End of Year ¹	Contributing Factors to Gold Inflow (+), Outflow (-)							
		Gold Inflow	Sil- ver	Merchan- dise	Serv- ices	Capital Movement			Re- sidual ²
						Total	Long Term	Short Term	
1935	10,125	1,720	-396	+ 236	+ 4	+1,508	+436	+1,072	+ 368
1936	11,258	1,147	-114	+ 33	-137	+1,208	+777	+ 431	+ 157
1937	12,760	1,271	- 88	+ 265	-208	+ 877	+521	+ 356	+ 425
1938	14,512	1,657	-206	+1,134	+ 39	+ 441	+ 97	+ 344	+ 249
1939	17,644	3,018	- 77	+ 859	- 50	+1,497	+ 27	+1,470	+ 789
1940	21,995	4,099	- 55	+1,396	+ 80	+1,519	-138	+1,657	+1,159

¹ Gold stock does not increase by same amount as inflow because of domestic production.

² Balancing item covering errors and omissions in other estimates.

Source: *Banking and Monetary Statistics*, pp. 537-538.

Tripartite Agreement

The flow of gold from France, Netherlands, Belgium, and Switzerland, however, succeeded only in putting upon these economies the deflation experienced by the United States prior to devaluation. Loss of gold reduced bank reserves. The high interest rates, which followed naturally, were encouraged by the central banks in their effort to retain gold. However, gold was less responsive to interest paid on short-term balances than it was to the fears of the holders of the balances, a fact which explains the movement of such large sums to New York. High interest rates were unable to hold funds in those markets, as they would have done in more normal times. The result was that the gold bloc was forced to devalue in order to be able to maintain new gold parities between their currencies and others.

On September 26, 1936, France arranged to devalue the franc, but acted in cooperation with the United States and England. A *Tripar-*

tite Agreement was entered into whereby these three countries, along with others who might join, would use stabilization funds to control exchange rate movements and also would agree not to enter into currency warfare by further competitive devaluations. In accordance with this agreement, the Treasury stopped the licensing of private transfers of gold, and henceforth all gold entered and left these countries through their central banks or stabilization funds.

It might be noted in passing that the stabilization funds could operate only so long as they offset temporary fluctuations in the exchanges. If, for example, speculators began to buy francs in anticipation of a later rise in the exchange rate, the French fund could supply francs, or the American fund could supply gold, thus creating the supply to meet the demand. If, however, fundamental differences in price levels led to persistent unbalance, the funds simply would exhaust themselves in attempting to offset them. In this case, the governments involved presumably would agree on new exchange rates.

Member Bank Reserves

Member bank reserves grew rapidly as a result of the gold inflow. When gold was sold to the Treasury, payment was made by check drawn upon the account of the Treasury at the reserve banks. The check would be deposited by the seller or his agent in his account at a commercial bank, which would thus have larger deposits, and, upon collection of the check, larger reserve balances at its reserve bank. If the new deposit were checked out, the reserves would move to other banks. As deposits circulated, the new reserves became diffused throughout the whole banking system. The process was so rapid that the banks found that their excess reserves were accumulating. Extremely easy money conditions appeared as the banks paid off their reserve bank indebtedness and bought bond investments, thereby forcing bond prices up and yields down.

Still the excess reserves accumulated until considerable fear developed that, should there be a growth of loans as large as possible on the basis of these reserves, there would be a drastic inflation. Consequently, the power granted to the Board of Governors by the Banking Act of 1935 to double reserve requirements was exercised.

The increase was made in two steps, on March 1 and May 1 of 1937. In 1938, a reduction was made in response to the business re-

cession of that year. The higher reserve requirements were soon exceeded as a result of the continuation of gold imports, and high excess reserves continued until the war period. In other words, the reserve banks were out of control of the money market. Rediscounts were *nil*, and excess reserves exceeded reserve bank holdings of bonds. Open-market operations, therefore, were relatively useless. In addition, sale of bonds in the large quantities necessary to make a serious dent in the excess reserves would have depressed bond prices and embarrassed the Treasury.⁷

Demand deposits rose rapidly from the depths of the depression as loans and investments picked up. Gold imports increased bank deposits, but more important, they provided reserves for the secondary expansion. By the end of the decade, demand deposits were more than twice as great as they had been in 1934, and they could have been expanded far more if the reserve ratio had been drawn down to the minimum. It will be noted that excess reserves were nearly seven billion dollars in 1941 and that total reserves were only 2.5 billion dollars in 1933. On the assumption that the banks on the average needed a 20% reserve ratio, it would have been possible theoretically for an increase in loans and investments to have inflated deposits by another 30-35 billions at that time.

TABLE 63

DEMAND DEPOSITS, MEMBER BANK RESERVE BALANCES,
REQUIRED RESERVES, EXCESS RESERVES, AND BORROWINGS, 1933-1941
(in millions of dollars)

January 1,	Member Bank Reserves			Borrowings	Demand Deposits
	Total	Required	Excess		
1933	2,516	1,932	584	254	18,140
1934	2,740	1,875	866	85	18,042
1935	4,355	2,320	2,035	8	23,940
1936	5,780	2,747	3,033	6	28,040
1937	6,716	4,622	2,093	3	31,896
1938	7,183	5,829	1,353	11	29,317
1939	9,029	5,545	3,484	5	31,853
1940	11,985	6,521	5,464	..	37,488
1941	14,340	7,508	6,832	..	44,110

Source: *Banking and Monetary Statistics*, pp. 78, 396.

⁷ These changes in the reserve situation are illustrated in Figure 22, Member Bank Reserves and Related Items, on page 281, *supra*.

Such was the situation as the United States began to be drawn into the world conflict. Early in 1941 the Board of Governors warned of impending inflation and requested Congress to grant it still further powers over the monetary system. The Board requested legislation to eliminate certain inflationary tendencies resulting from silver legislation, discussed in the next section; special handling of gold imports which would keep them from becoming bank reserves; and the financing of the defense program by heavier taxation rather than by creation of more bank debt.⁸ The 1938 reduction in reserve requirements was rescinded late in 1941, and under special authority from the President, the Board laid down rules restricting loans for consumer purchases.

Silver Legislation

Many people seem to confuse the role of silver in the monetary system with that of standard money. This was perhaps natural when gold and silver coins circulated side by side in this country prior to 1933, although as a matter of fact silver coins were a type of credit money. The misconception hardly ever carried to the point where the United States was thought to be on a paper standard because paper dollars also circulated. Perhaps the inclusion of this section in a chapter dealing with the revised gold standard may encourage the confusion. Hence, it must be emphasized that silver coins have not been standard money since the free coinage of silver was given up, when gold was overvalued in 1834. This event was followed, it will be recalled, by the Subsidiary Coinage Act of 1853, which provided limited coinage of whatever amount of coins were required by trade, such coins being made sufficiently underweight that they were worth more as coins than as silver. The "Crime of '73" recognized the lack of silver being offered to the mint at the statutory price of \$1.29, and was followed by the silver purchase acts of 1878 and 1890, whereby the Treasury was required to purchase and coin (or issue certificates and notes for) limited amounts of silver. The history of these developments has been treated earlier. Silver legislation again came to the fore while the gold legislation, just described, was being put into effect.⁹

⁸ *Federal Reserve Bulletin*, January, 1941

⁹ There was also a silver act during World War I, the Pitman Act, which permitted withdrawal of silver from circulation for sale to the British, who required the metal to

Nature of Silver Purchases,

The effect of government purchases of silver is basically no different from that of government purchases of any other commodity. The primary effect is to raise the price of what is being bought. If the government is obliged to buy unlimited quantities of some commodity at a fixed price, the market price must rise to that fixed price before other buyers can obtain any of the supply. If the government buys limited quantities at the market price, such action tends to raise that price or at least to keep it from falling. The 1878 and 1890 laws were of the latter type. A gold standard is an example of unlimited purchases (and sales) at a fixed price. The silver legislation passed during the depression was of a mixed type.

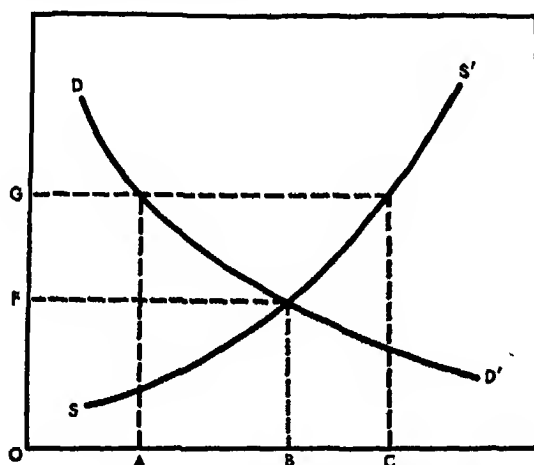


FIG. 37.—Effect of Unlimited Government Purchases at a Fixed Price.

The nature of government purchases in unlimited quantities at a fixed price is illustrated in Figure 37, where hypothetical supply and demand curves for some commodity (say silver) are drawn. The height of the line OF measures the price that would be realized in a free market, where the quantity OB would be sold. If the government price is assumed to be OG, production will expand to OC but commercial buyers will take only OA units at the higher price, thus leaving the quantity AC for the government to take each time period in

meet obligations in India. The act required the Treasury to replace the silver after the war at the price of \$1.00 per ounce, which was well above prevailing postwar prices.

order to maintain the price of OG. Thus producers can sell more output at a higher price, but "ordinary" users of the commodity must pay a higher price for a smaller supply.

Silver Agreements in 1933

It has already been mentioned that the Thomas Amendment in 1933 permitted debtor countries to pay part of their war debts with silver valued at 50 cents an ounce. As this policy created an additional demand for silver, which at the time was selling for considerably less than 50 cents, its price rose somewhat. Also in the early part of 1933 Senator Wheeler obtained the adoption of a resolution expressing congressional favor of eventually adopting bimetallism at the old 16-1 ratio; bimetallism at this ratio would require that the price of silver be increased to \$1.29 per ounce. This action was followed by a Silver Agreement adopted at the London Economic Conference, whereby the principal silver producing nations agreed to limit sales of silver. A supplement to this agreement bound the United States to purchase virtually the entire domestic output of this country's mines. In other words, the silver interests were able to obtain a silver purchase plan through this device rather than through domestic legislation.

In consequence of the agreement made at London, the President issued a Proclamation of December 21, 1933, which stated that the mints would purchase any newly mined domestic silver for 64½ cents an ounce. This price, it will be noticed, is just half the monetary value assigned to silver; thus the Treasury was given a potential profit of the other 64½ cents. Even so, the price was about twice that prevailing in the market at the time.

The Silver Purchase Act of 1934

In addition to the provisions noted earlier in this chapter, the Gold Reserve Act contained authority for the President to devalue the silver dollar in proportion to the devaluation of the gold dollar. The President did not exercise this authority, however, and said nothing about using silver as money at a higher monetary value than \$1.29 an ounce. Consequently, the silver interests in Congress utilized the inflationary temper of the times to push for more favorable treatment for silver. The result was the Silver Purchase Act of June, 1934. This

act did not restore bimetallism and free coinage of silver, but it did provide for virtually unlimited purchases of silver by the government at prices to be set by the government.

The act provided that the Treasury should purchase silver until the silver stock held by the Treasury, when valued at \$1.29 an ounce, should equal one-third the value of the gold stock valued at \$35 an ounce, or, as the act was worded, until the silver stock would comprise one-fourth of the total gold and silver stock. This is a confusing provision because it appears to adopt some sort of standard money function for silver. This it does not do, of course, because silver money in circulation is a demand liability for gold reserves, where there is a gold standard. Only if there were free coinage of silver and if the silver dollar "contained" a dollar's worth of silver could silver be standard money. Treasury purchases under the act were to be made in domestic or foreign markets at prices considered to be "in the public interest" by the Secretary of the Treasury, except that prices above \$1.29 should not be paid.

A further exception was made in the case of silver already mined and in the country on May 1, 1934, for which the price could not exceed 50 cents. Otherwise, there would be a clear gift to speculators who had held silver in anticipation of such legislation. This situation also led to prohibition of silver exports, which was designed to prevent silver from being exported and promptly sold as foreign silver to the Treasury for higher prices. This was followed by the nationalization of all silver, similar to the nationalization of gold of the previous year. All domestically held silver was taken by the government and paid for at the rate of 50 cents an ounce.

Effect on Money Supply

Under the terms of the Silver Purchase Act, the Treasury was to issue silver dollars or silver certificates equivalent either to the cost of the silver or to its monetary value at \$1.29 an ounce. As the policy has been to follow the former course, the Treasury has not been realizing the potential seigniorage. In other words, when purchases were begun under the act at an announced price of 64½ cents, silver so purchased was coined or issued as silver certificates up to the amount spent for the silver. One hundred ounces cost \$64.50 and the Treasury reimbursed itself, and thus increased the supply of money, by

issuing that amount. The other 50% of the silver was held by the Treasury as inactive and was considered as receipts spent for the bullion. The silver held as reserves for the certificates is valued at \$1.29 an ounce; this accounts for the release to inactive reserves of the other 50%.

Purchases and Prices

The purchases made by the mints and assay offices for the period 1936-1945 are shown in Table 65, and are compared to the production of silver in the United States. It is apparent that the Treasury has absorbed virtually the entire domestic output, except for the war years 1943-1945. In addition, the early attempts to build up silver stocks to the required 25% of total monetary stocks resulted in large purchases of foreign silver. The futility of this attempt is illustrated in Table 64, which shows how the silver purchases "chased after" the rising gold stock but lost ground as a ratio to the total. Silver stocks never got as high as 20% of the total because of the rapid rise in the gold stock, discussed earlier in the chapter.

TABLE 64
MONETARY STOCKS OF GOLD AND SILVER,
1936-1945
(millions of dollars)

End of Year	Gold (at \$35)	Silver (at \$1.29)	Ratio, Silver to Total
1936	10,608.4	2,249.5	17.5
1937	12,318.3	2,542.1	17.2
1938	12,963.0	3,066.4	19.1
1939	16,110.1	3,605.2	18.3
1940	19,963.1	3,939.6	16.5
1941	22,624.2	4,148.7	15.5
1942	22,736.7	4,306.3	15.9
1943	22,387.5	4,298.5	16.1
1944	21,173.1	3,947.9	15.7
1945	20,213.0	3,685.8	15.4

Source: *Treasury Bulletin*, May, 1946, p. 71.

Newly mined domestic silver was purchased at several prices, as circumstances (including the political potency of the senators from silver-producing states) required. The original purchases were made,

as already mentioned, at 64½ cents, and this price continued until April 9, 1936.¹⁰ For a few days thereafter the price was 71 cents, and on April 23 it rose to 77½ cents. The price was lowered again to 64½ cents at the end of 1937, and continued at that level until July 1, 1939, when it again was raised to 71 cents. It was raised again to the peak of 90½ cents during the summer of 1946, as will be mentioned below.

TABLE 65

SILVER PRODUCTION IN THE UNITED STATES
AND SILVER ACQUISITION BY MINTS AND ASSAY OFFICES,
1936-1945
(millions of ounces or dollars)

Year	Silver Production in U.S. ounces	Silver Acquired by Mints and Assay Offices					
		Newly Mined Domestic		Foreign		Total	
		oz.	\$	oz.	\$	oz.	\$
1936	63.4	61.1	47.3	271.9	150.3	333.4 ¹	197.8 ¹
1937	71.3	70.6	54.6	241.5	108.7	312.2	163.3
1938	61.7	61.6	42.4	355.4	156.9	417.1	199.1
1939	63.9	60.7	40.1	282.8	120.5	343.3	160.6
1940	68.3	68.3	48.5	139.8	50.9	208.0	99.4
1941	71.1	70.5	50.1	72.6	27.1	143.1	77.2
1942	55.9	47.9	34.0	14.3	6.0	62.1	40.0
1943	40.8	5.5	3.9	...	...	5.5	3.9
1944	35.7	x	x	...	...	x	x
1945	29.3	.9	.6	...	...	.9	.6

¹ Total for 1936 includes 400,000 ounces of nationalized silver at \$200,000.

Source: *Treasury Bulletin*, May, 1946, p. 72.

Foreign silver has been acquired at varying market prices which averaged, through 1945, 51 cents per ounce. Purchases by the government, and the apparent willingness on its part to raise the price whenever necessary to obtain silver, pushed up the price to 81 cents by the spring of 1935. At that point, however, the Treasury reduced its foreign purchases, and the price dropped rapidly to about its 1934 level.

During the war silver became a scarce war material. Silver undoubtedly would be used more widely as an industrial metal if gov-

¹⁰ The prices quoted here are not precise, but exactness of fractions makes no difference to the general discussion. Exact prices are quoted in *Treasury Bulletins*.

ernment purchases did not make it too expensive. It was used as a substitute for tin in solder during the war, and also as a substitute for copper in conducting electricity. Tests under the auspices of the War Production Board showed that it could be used in place of tin as a coating for milk cans and tin cans. Consequently, while all of the possible uses were not actually made, silver was put under controls by the WPB and channeled to war uses, instead of to the Treasury; the price of 71 cents became the ceiling price set by the Office of Price Administration. However, since the silver bloc objected to the sale of inactive silver by the Treasury, arrangements were worked out whereby the Treasury "lent" silver bars to war industries. "Non-essential" users of silver (silversmiths, jewelers, and the like) thus could obtain no silver other than remelted, since imports were also under allocation. As a result, the Green Act was passed, which finally permitted the temporary sale of silver from the Treasury at 71 cents an ounce. In the meantime the price of foreign silver was 45 cents, frozen at that level by the Office of Price Administration. After the war controls were lifted, fabricators of silver rushed to buy foreign silver and raised its price. Ceiling prices on their products were based on the 45-cent cost, and it was also virtually impossible to discover whether such manufacturers were using foreign silver or domestic 71-cent silver after the latter was available. Hence, the OPA raised the foreign ceiling to the domestic one of 71 cents. The Green Act expired at the end of 1945, and domestic fabricators again were unable to obtain the raw materials demanded by their scale of operations. Inflated incomes were translated into greatly expanded demands for the products of silver.

Agitation for renewal of the Green Act led to a compromise (as so often has happened with silver legislation as well as other legislation).¹¹ The silver bloc demanded that the Treasury be required to pay \$1.29 for silver, a requirement that would have precluded the selling of silver at lower prices, except for inactive reserves already on hand. This price practically would have restored the free coinage of silver, as the silver in a dollar contains a dollar's worth of silver

¹¹ In spite of the long history of silver legislation, one of the mining corporation presidents could tell Congress, in opposition to the Green Act, that the potential seigniorage "profit which may inure to the Treasury . . . should not be used as a subsidy to benefit a relatively small group engaged in the manufacture and sale of luxury items." He did not mention the subsidy received by the silver mines under the various silver acts.

when the price is \$1.29. Such a price, of course, would have been the most favorable to the producers since about 1873. The compromise reached called for a new price of 90½ cents, which, after all, must be considered a decided victory for the silver bloc.¹²

Comments on Silver Purchases

One of the most interesting questions related to this history of silver purchases is: How have the silver interests "gotten away with it"? It is clear enough that the seven mountain states, where silver is mined, have fourteen senators, who usually have formed a relatively able group. Even so, silver mining is a comparatively minor industry, certainly for the country as a whole, and even for some of the mining states. Various writers have pointed out that more national income is generated in peanut raising or the chewing gum industry or scores of others than by silver mining, and even that the "divorce industry" means more income to Nevada than does silver. The answer lies not alone in "practical politics," but also in the belief of most of the members of the silver bloc that silver actually has been discriminated against; that silver "naturally" is money in some way or other, and that it is "wrong" not to have free coinage of silver. After the 90½-cent compromise reached in 1946, Senator McCarran (Nevada) declared, "This does not mean the end of the long fight which began with 'the Crime of '73,' but it brings the end of that fight in sight."

The relative insignificance of the domestic silver industry rules out any likelihood that a large part of the population may be benefited by "doing something for silver." During the depression there was the excuse that every other inflationary device was being thought of. Why not add this one? During and after the war, of course, the problem was just the reverse and inflationary measures were hardly desirable.

The nature of silver mining is such that a subsidy, in the form of higher government purchase prices, may not greatly increase output. This is so because silver is mined in conjunction with other metals, and would be mined in any event so long as the combination is profitable. It is doubtful whether any significant mining is carried on primarily or solely for silver ore. In all likelihood the increased price will

¹² The House first passed a bill permitting Treasury sales at 71 cents, which the Senate did not adopt. The Senate amended the bill to provide purchases and sales for two years at 90 3/4 cents and thereafter at \$1.29. The 90½-cent price was agreed upon in conference.

serve merely to increase profits of mining companies. In this connection it should be noted that purchases of foreign silver may benefit American companies which own and operate foreign properties. That this benefit may act in boomerang fashion was also demonstrated in 1945, when the Mexican government raised taxes on mining properties and Mexican labor struck for higher wages, each endeavoring to get its "cut" of the higher prices paid by the U.S. Treasury.¹⁸

Whatever the basic reasons, and they are numerous, for silver legislation, it is reasonably certain that the 90½-cent price in effect when this is written will not end the controversy any more than did previous artificial prices. It may be expected that higher prices will be demanded. The magic ratio of 16-1 seems to hold a powerful fascination and nothing in the past history of silver legislation would lead one to doubt that it will be a goal of the silver bloc. Now that gold is valued at \$35, silver would have to rise to \$2.19 to produce the 16-1 ratio.

Little has been said in this discussion of the effects abroad of the silver purchases. Obviously, they were beneficial to foreigners who might have silver for sale, including foreign branches of American firms. American dollars which were put into the foreign exchange markets for the silver imports tended to increase American exports or add to the volume of foreign-owned balances in this country. China and Mexico were special cases. China had a silver standard. The silver purchases tended to draw out Chinese monetary and bank reserves. As the price of silver went up, the effects in China were therefore deflationary. As a result, the Chinese were forced to suspend the silver standard and arrange to exchange silver for American gold. Mexico had a circulating money made up largely of silver, so the rising prices drove up the value of the coins to the melting point, where the coins were sold as bullion, or first melted and made into bars for sale. As a result, the Mexican government called in the silver coins and replaced them with paper.

¹⁸ See *Fortieth Annual Report to Stockholders*, United States Smelting, Refining and Mining Company (December 31, 1945). A related development was the plan of the British government in September, 1946, to replace silver coins with coins of high nickel content in order to save over \$200,000,000 worth of silver, which could be used to pay lend-lease debts.

XXVIII.

FINANCING WORLD WAR II

AS IN THE FIELDS of military action and production, developments in finance during the war were on a scale previously unknown. These developments provide illustrations of the principles of the operation of the financial system that are all the more clear-cut because of their magnitude. The interrelations of government borrowing, spending, and taxing, of the volume of money, bank loans and investments, and of prices and production are revealed as if under a microscope.

The Government Debt and the Banks

At the end of 1939 the interest-bearing debt of the United States government was approximately \$41 billion. At the end of 1945, it had grown by \$240 billion to approximately \$280 billion. The unprecedented size of these figures is illustrated by the fact that during World War I the Federal debt increased about \$25 billion. During the prosperous year of 1929 the incomes of all the people in the country added up to about \$90 billion. While the government spent about \$100 billion a year for war purposes during hostilities, total government expenditures during the 1920's were about four billion dollars a year and during the New Deal period about eight billion. In view

of the upheavals in price levels, exchange rates, and other related financial indicators during and following earlier wars, one may well wonder what magic permitted the development of such astronomic figures this time, and what the results have been and promise to be.

In a study of money and banking, probably the first problem to approach is the relationship of the government's debt to the volume of money. It has been brought out in preceding chapters how any loan or investment by a commercial bank results in increased bank deposits, first at the lending bank and later, by the circulation of checks, throughout the banking system. It may now be well to examine this explanation further.

The government may acquire funds by taxing or borrowing. It may borrow from individuals and institutions that turn existing money over to the government in exchange for bonds or it may borrow from commercial banks or (usually indirectly) from the reserve banks. If the government borrows from individuals who might otherwise have paid the same amounts in taxes, the results are very similar to those that would have followed from taxation. In either case, checks are drawn—for taxes or bonds—and bank balances shift from private ownership to government ownership. There is no change in the volume of bank deposits as a result of the borrowing if the Treasury maintains commercial bank deposits. Whether the government raises funds through taxation or borrowing, these funds may be transferred from private accounts at commercial banks to government accounts at the reserve banks, however. This process reduces bank reserves by an equivalent amount. As the checks are cleared, the commercial banks lose their reserve balances, which are shifted to the Treasury's account. On the other hand, when the government spends the money, people and business firms deposit the checks, the commercial banks again gain reserves as their deposits rise, and balances at the reserve banks swing back to the member banks from the Treasury's account.

If government bonds are sold to the banks the results are somewhat different. The government obtains bank deposits in addition to those already owned by individuals, business firms, and others. As the government spends these funds, they are acquired by individuals and firms, so that the volume of bank deposits in the hands of the public is increased.

In order to eliminate the effects on the money market that would result from the loss of reserves by banks to the Treasury, a situation which would force the banks to sell securities or rediscount in the absence of large excess reserves, the Treasury accepted payment for securities in deposits at the commercial banks. This was the case

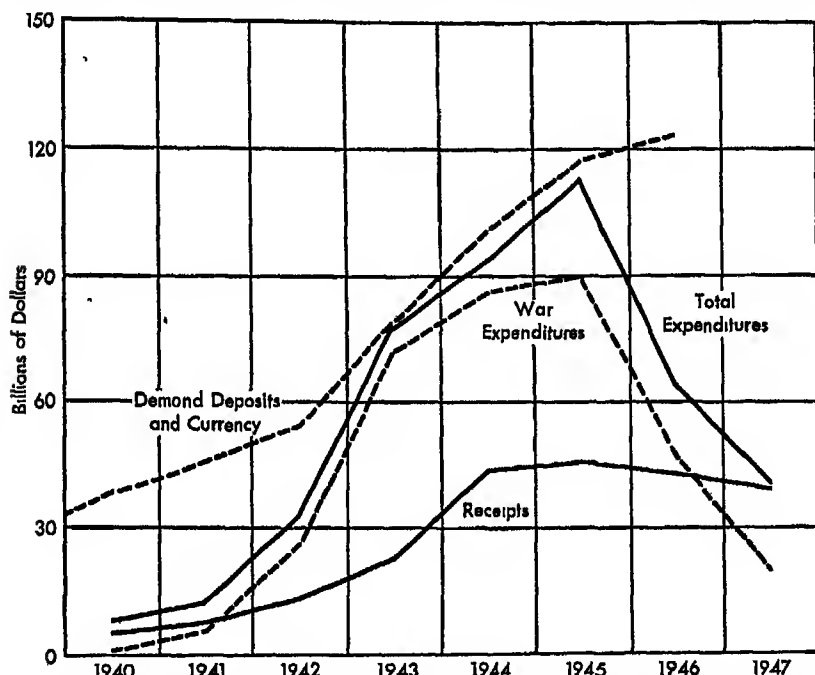


FIG. 38.—Receipts, War Expenditures, and Total Expenditures of Federal Government, 1940-1947 Fiscal Years (1947 estimated); and Demand Deposits of all Banks (except interbank deposits) and Currency in Circulation. (United States Treasury and Federal reserve figures)

whether the bonds were purchased by the banks or their customers. If the banks bought bonds, the Treasury got additional bank deposits; if bank customers bought bonds, the Treasury obtained their deposits. The Treasury then withdrew these funds to the reserve banks at about the same rate as it was spending money. As a result, the volume of bank deposits and the volume of reserves were relatively unaffected by the shift.

To facilitate this process, legislation in April, 1943, exempted

such government "war loan deposits" from reserve requirements. Thus, as individuals purchased bonds their deposits were shifted to Treasury ownership, and required reserves were released. These excess reserves permitted the banks to increase their own holdings of government securities. As the government spent funds, which then returned to private ownership and required reserve balances, the banks sold some of their holdings to build up their reserves. The reserve banks often purchased some of these securities in order to maintain a sufficient volume of bank reserves, as well as to support bond prices.

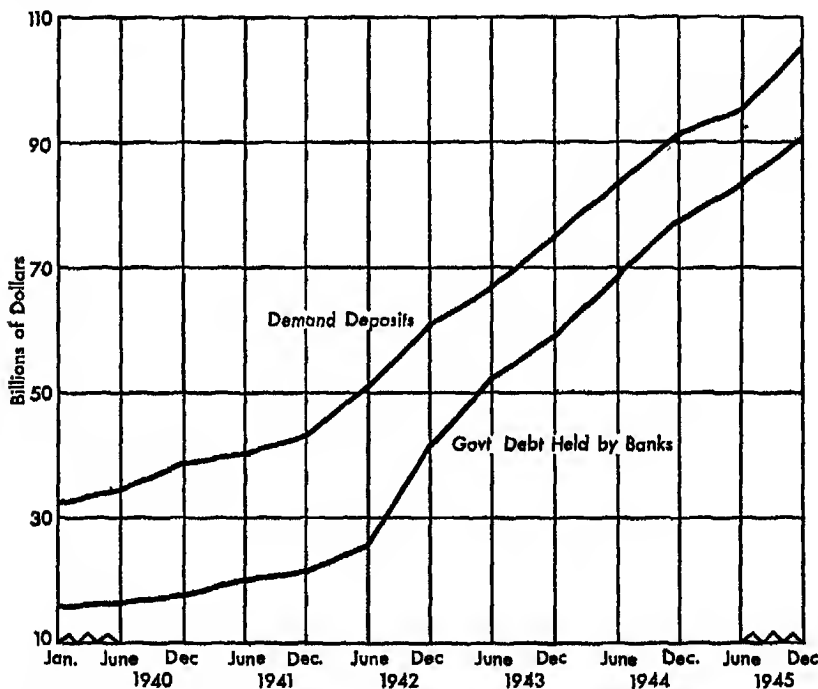


FIG. 39.—Government Debt Held by Commercial Banks, and Demand Deposits, 1940-1945. (*Federal Reserve Bulletins*)

Table 66 shows the ownership of the government debt in June, 1942 and June, 1945. This table indicates the extent to which the government obtained funds from private investors—individuals, savings banks, insurance companies, and the like—and from commercial banks and Federal reserve banks.

TABLE 66

OWNERSHIP OF U.S. GOVERNMENT SECURITIES,
JUNE, 1942 AND JUNE, 1945
(millions of dollars)

	June, 1942	June, 1945
Total interest-bearing securities	76,517	256,766
Federal reserve banks	2,645	21,792
Commercial banks	26,410	84,000
Mutual savings banks	3,891	9,600
Insurance companies	9,200	21,700
Other investors—		
Marketable securities	10,700	40,500
Nonmarketable securities	13,000	54,200
Gov't agencies & funds—		
Special issues	7,885	18,812
Public issues	2,738	6,128

Source: *Federal Reserve Bulletin*, Sept., 1945, p. 934.

These figures bear out the description given above. They show that during these three years the commercial banks purchased (net) about \$58 billion of government securities, which tended to increase bank deposits by that amount. On the other hand, a large part of the debt was sold to other buyers with the result that existing balances were transferred to the government. The success of the efforts to sell war savings bonds to individuals in exchange for their savings, through pay-roll deductions and other plans, is shown in the increase in non-marketable securities from \$13 billion to \$54.2 billion.

The change in the volume of bank deposits is shown in Table 67. Figures are shown both for all commercial banks and for member banks; figures for member banks alone are distorted somewhat by the increase in the number of such banks from 6,338 in 1938 to 6,840 in 1945.

Guaranteed and Direct War Loans

In order to facilitate the acquisition of necessary funds by war contractors and subcontractors, the President in 1942 authorized the War and Navy Departments and the Maritime Commission to guarantee bank loans made to these borrowers. These departments

used the reserve banks as agents in arranging such guarantees, arrangements which followed the Board of Governors' Regulation V. An important part of the business loans made by banks during the war was made up of these "V loans,"—approximately half of the loans in 1943 and two-thirds in 1944. Similar arrangements were later made for "T loans," which were loans made to finance the termination of war contracts. The government was concerned with the

TABLE 67

BANK DEPOSITS, 1938-1945¹
(millions of dollars)

		All Commercial Banks		Member Banks	
		Demand	Time	Demand	Time
1938-Dec.	31	28,695	14,862	28,842	11,369
1939-Dec.	30	32,492	15,327	28,231	11,699
1940-Dec.	31	38,518	15,846	33,829	12,178
1941-Dec.	31	44,316	15,944	38,846	12,347
1942-Dec.	31	61,395	16,419	54,523	12,754
1943-June	30	67,554	17,634	59,670	13,794
	Dec. 31	75,561	19,350	66,438	15,268
1944-June	30	83,588	21,326	73,488	16,884
	Dec. 30	91,644	24,183	79,774	19,259
1945-June	30	97,150	27,250	84,400	21,748

¹ Excluding interbank deposits.

Source: *Federal Reserve Bulletin*, Sept., 1945, p. 920.

prevention of a situation whereby businessmen would have their funds "tied up" in war production during the time necessary to calculate what was owed on unfinished contracts; such a situation would have made it more difficult for business to reconvert to postwar production.

In addition to the guaranteeing of loans made by commercial banks, the government and the reserve banks stood ready to make loans directly to producers of war goods. The departments mentioned above, the Reconstruction Finance Corporation, and the Smaller War Plants Corporation would directly advance funds to war contractors. Funds also were available from reserve banks directly to producers of articles certified to be necessary to the war effort.

Federal Reserve Credit

Federal reserve policy during this period is best illustrated by reference to the changes in the factors of increase and factors of decrease of reserve bank credit. The announced policy of the reserve officials was the provision of an adequate volume of bank reserves to make possible the sale of the necessary amounts of government securities. It will be recalled that during the late 1930's and the immediate pre-war period, bank reserves had been rising rapidly as a result of the inflow of gold. Excess reserves resulted, so that the banks entered the war period well prepared to increase their loans and investments. In fact, the problem in 1941, before the United States was drawn into the war, was whether loans and investments might not increase too fast. On November 1, 1941, reserve requirements were raised to the maximum possible—14, 20, and 26 per cent for demand deposits in banks in country districts, reserve cities, and central reserve cities, and 6 per cent for time deposits. As a result of this action, as well as of increased loans and investments and loss of currency to circulation, excess reserves declined during 1941, but they still were over \$3,000,000,000 at the end of the year.

Factors of Increase and Factors of Decrease

The great increase in demand deposits, from less than \$29 billion in 1938 to over \$84 billion in 1945, represented a drastic increase in member bank required reserves. Reserves, it will be recalled, increase with deposits of new standard money (resulting from gold production or imports) and government credit money, or through extension of Federal reserve credit by increased reserve bank holdings of securities or discounted bills. The interaction of these factors can be traced from the figures in Table 68. This table is similar to one used in Chapter XVIII to illustrate factors of increase and factors of decrease. Reference should be made to the chart shown there to illustrate changes in these factors during the war years.

The changes shown in the third column of Table 68 may be regrouped to illustrate their effects upon member bank reserves or upon the amount of Federal reserve credit. The following changes increased reserves:

Increase in reserve bank credit	19,976
Increase in Treasury currency	995
Decrease in Treasury deposits	170
Decrease in nonmember deposits	173
Total	21,314

TABLE 68

MEMBER BANK RESERVES, RESERVE BANK CREDIT,
AND RELATED ITEMS, 1941-1945

(millions of dollars)

	July 2, 1941	July 3, 1945	Increase or Decrease
Reserve bank credit, total	2,273	22,249	+19,976
Discounts and advances	3	39	+ 36
Government securities	2,184	21,745	+18,561
All other ¹	86	464	+ 378
Gold stock	22,627	20,213	- 2,414
Treas. currency outstanding	3,150	4,145	+ 995
Money in circulation	9,704	26,834	+17,130
Treasury cash holdings	2,276	2,285	+ 9
Treas. deposits at res. banks	837	667	- 170
Nonmember bank deposits	1,820	1,647	- 173
Other Fed. res. accounts	289	450	+ 161
Member bank reserve balances—			
Total	13,128	14,722	+ 1,594
Excess	5,265	1,408	- 3,857

¹ Industrial advances and acceptances bought.

Source: *Banking and Monetary Statistics*, p. 394 and *Federal Reserve Bulletin*, Sept., 1945, p. 909.

The following decreased bank reserves:

Decrease in gold stock	2,414
Increase in money in circulation	17,130
Increase in Treasury cash holdings	9
Increase in other Fed. res. accounts	161
Total	19,714

The increases in bank reserves were greater than the decreases, netting an increase of \$1,594 million.¹

Stated another way, the figures may be arranged to show their effects upon reserve bank credit. The following are causes of increase:

¹ The figures just tabulated show an increase of \$1.6 billion rather than \$1,594, owing to errors resulting from rounding.

Decrease in gold stock	2,414
Increase in money in circulation	17,130
Increase in Treasury cash holdings	9
Increase in other reserve accounts ¹	161
Increase in member bank reserves	1,594
Total	21,308

In other words, if member bank reserves were to remain the same, the reserve banks had to supply, through open-market purchases or loans to the member banks, funds to make up bank losses when depositors (1) used their balances to purchase gold for export or (2) withdrew currency, (3) when the Treasury increased its holdings of cash, and (4) when "others," such as foreign central banks, gained funds at the expense of the member banks. In addition to these factors, total reserves did not remain the same but increased. The remaining factors may be regrouped as resulting in decreases in reserve bank credit:

Increase in Treasury currency outstanding	995
Decrease in Treasury deposits	170
Decrease in nonmember balances	173

Some of the increased currency in circulation was newly issued Treasury currency, and thus it did not drain bank reserves or increase reserve bank credit. The decline in Treasury balances represented a shift of those funds to other accounts, such as member bank reserve balances, as did the decrease in nonmember balances; thus member bank reserves increased or reserve bank credit decreased.

The figures clearly show that Federal reserve policy was to purchase such quantity of securities in the open market as would enable the Treasury to sell its bonds without difficulty. It was Treasury policy to sell as many bonds as possible to private investors, so that a large part of the needed revenue would be provided by taxation and savings. These two sources, however, were not adequate, and commercial banks provided large sums of new money, as we have seen. In 1944, for example, the Treasury spent \$96 billion and also added \$10 billion to its working balance. This total of \$106 billion was made up of \$44 billion tax revenues, \$37 billion borrowed from individuals and corporations, and \$25 billion borrowed from banks. Thus about 24% of the funds raised in that year came from the banks (including savings banks).

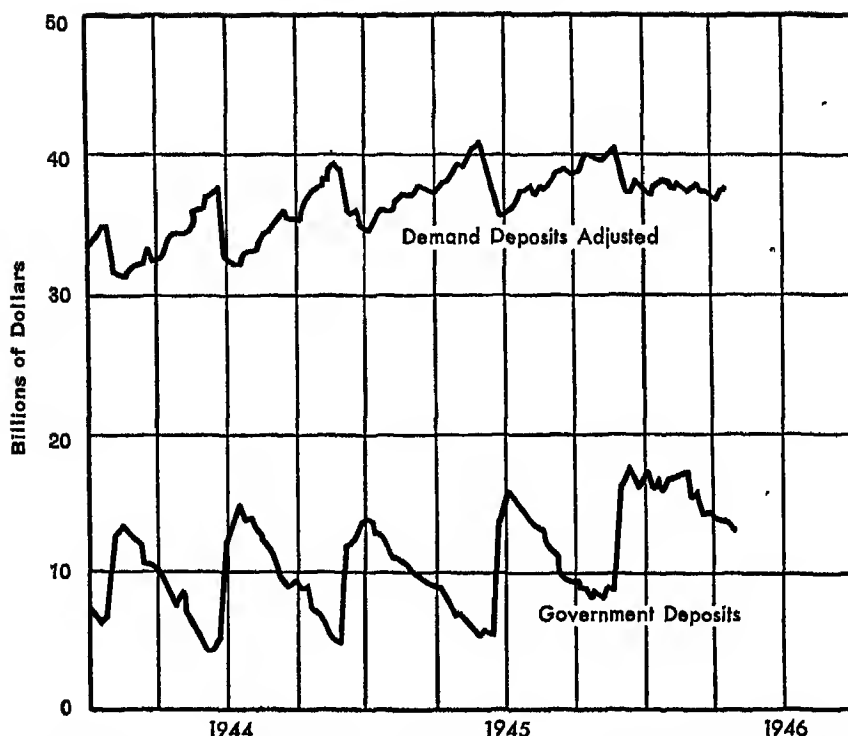


FIG. 40.—Private and Government Demand Deposits in Reporting Member Banks in 101 Cities. (Federal Reserve Bank of New York, *Monthly Review*, May, 1946, p. 38.)

As a consequence of the open-market purchases, amounting to \$20 billion in three years, member bank reserves increased by about \$1.5 billion in spite of the great increase in currency in circulation and the decline in the gold stock. Nearly all of the increase in reserve bank holdings was made up of short-term issues; over \$18 billion of the holdings were Treasury bills and certificates in June, 1945. As a result of the open-market operations, the banks did not resort to borrowing from the reserve banks until late in the war. The great expansion of deposits accompanying the rise in investments, at the same time that the public withdrew large amounts of currency, was made possible by the excess reserves existing at the beginning of the war plus the reserves created by reserve bank credit. Member bank borrowing in 1944 was the first significant borrowing since the days of

the depression of the 1930's. It was for short periods, to meet temporary needs by a small part of the banking system. Borrowing amounted to nearly \$600,000,000 in June, 1945, but receded to \$164,000,000 in July. Throughout the war rediscount rates remained at:

- $\frac{1}{2}\%$ for advances secured by government obligations maturing or callable in one year;
- 1% for advances secured by government obligations maturing or callable beyond one year and discounts of and advances secured by eligible paper;
- $1\frac{1}{2}\%$ for other secured advances.

In addition, the reserve banks lent to nonmember banks at 1% when the advances were secured by government obligations.

Reduction of Reserve Bank Reserve Ratio

The tenfold increase in reserve bank credit naturally reduced considerably the reserve ratio of the reserve banks. It will be recalled that the Gold Reserve Act of 1934 set up requirements of a 40% reserve in gold certificates for Federal reserve notes and a 35% reserve in gold certificates or other lawful money for reserve bank deposits. Also, emergency legislation in 1932 had permitted the reserve banks to collateral Federal reserve notes with government securities, in order, at that time, to free gold which was "tied up" as security for the notes because of the insufficiency of eligible paper, which formerly had been used for that purpose. Emergency legislation not only permitted the use of government securities instead of commercial paper, but their use as 100% collateral for notes. Although later movements provided plenty of gold, authority to use bonds as 60% collateral was extended from time to time by Congress.

During the war the reserve ratio of the reserve banks declined so greatly that the Board requested Congress for an indefinite continuation of the power to use government bonds as collateral for notes and also to reduce the required reserves to a uniform 25% in gold certificates for deposits and notes. The situation is shown clearly in these figures:²

² *Annual Report*, Board of Governors, 1944, p. 58.

	Dec. 31, 1941	Dec. 31, 1944
	(in billions of dollars)	
Reserves	20.8	18.7
Deposits	14.7	16.4
Federal reserve notes	8.2	21.7
Liabilities requiring reserves	22.9	38.1
Reserve ratio	90.8%	49.0%

These figures show to what a great extent the rise in reserve bank credit took the form of increased note circulation. With this increase in circulation and with a decrease in gold certificates held by the reserve banks, the reserve ratio fell to less than 50%, and promised to keep falling as the volume of currency in circulation rose. It was possible to foresee the approach to the actual minimum legal requirements of 35% and 40%. Some of the individual reserve banks, of course, had lower ratios than the average of 49%; three of the banks had less than 45%.³

It was possible for the banks to meet demands on them for currency by issuing Federal reserve bank notes without metallic reserves. The Board was reluctant to do this because the reserve bank notes are "residual" notes which originally were designed to take the place of the national bank notes and later were made issuable again as emergency currency without reserves. It is preferable to have a uniform note issue made up of Federal reserve notes. The Board also could have suspended the reserve requirements, as provided in the Federal Reserve Act, but this too is presumably an emergency measure for short periods of currency scarcity. Furthermore, such suspension is accompanied by graduated taxes on the banks, which they are required to pass on in their rediscount rates.

This wartime problem serves to illustrate the changes in the banking system since the establishment of the reserve banks by the law of 1913. The reserve requirements of the Federal Reserve Act were designed to assure that the reserve banks could meet any likely drain of gold and to limit the extension of reserve bank credit. Changes in the gold standard by the Act of 1934, prohibiting the domestic use of gold money and putting exports under license, reduced the need for gold reserves. Secondly, the whole trend of monetary manage-

³ Since the reserve banks may exchange assets among themselves, their combined reserve ratio is the more significant figure.

ment has been away from a close tying of a country's credit structure to the volume of gold that happens to be available. As a result of these factors and the existing situation, Congress in June, 1945, amended the reserve requirements for Federal reserve notes and deposits as requested and eliminated the Federal reserve bank notes.

Changed Nature of Note Issue

The great expansion in the note circulation also illustrates the difference in the banking situation. In 1913 the theory on which the Federal reserve notes were established was that in times of active business, seasonal or otherwise, rediscounting would provide the member banks with funds which they could withdraw as notes to meet their customers' withdrawals of currency. The increased business activity would provide the paper for rediscounting, and the eligible paper and the notes would decline together when the currency was brought back to the banks. Thirty years later the volume of eligible paper was minute in relation to the increased need for circulating currency. Bank assets had become overwhelmingly government paper. Banks had become primarily lenders to government rather than to industry.

If Congress had not continued the authority to collateral notes with government bonds, the reserve banks would have had to sell a sufficient volume of bonds to force the member banks to borrow enough to provide the reserve banks with the needed collateral. Strangely enough, this would have entailed no substantive difference in the security of the notes, because most of the banks would have borrowed on their own notes secured by government bonds. Hence, it appears that adherence to the old rules would have required large open-market sales of government bonds just at a time when an easy-money policy was required. Accordingly, the authority to collateral Federal reserve notes with bonds was extended indefinitely, an action which almost completely severed the notes from their theoretical basis of 1913.

The manner in which the increased cash in the hands of the public was made available is shown by the greatly augmented use of government securities as collateral: ⁴

⁴ *Annual Report*, Board of Governors, 1944, p. 77. Totals need not check because of dropping digits.

	Dec. 31, 1943	Dec. 31, 1944
	(millions of dollars)	
Notes issued by Federal Reserve Agent	17,512	22,507
Notes held by reserve banks	605	776
Notes in circulation	16,906	21,731
Collateral—		
Gold certificates	13,266	11,298
Eligible paper	4	79
U.S. Securities	4,488	11,534

These figures also illustrate the principle that the volume of currency in circulation follows rather than leads the volume of bank deposits. While it is true that bank deposits would be increased if large issues of paper money should be deposited in banks by a government, usually the sequence of events is the other way around. Bank loans and investments rise, bank deposits rise accordingly, the increased business activity and higher prices being financed by the bank loans require more hand-to-hand money, and currency is withdrawn from the banks. The banks then withdraw currency from their reserve balances. In other words, the public decides whether to hold its money in the form of currency or bank deposits, and the price level, the volume of retail trade, the wage level, and similar factors effect the most convenient ratio between currency and deposits.

Throughout this chapter references have necessarily been made to the movements of prices and gold during the war, although these references have been kept to a minimum in order to focus attention on the reaction of the monetary system internally to the increase in the government debt. These other problems are grouped for attention in the next section.

Price Rises

If economists had been asked in 1940 what would happen to the price level if, during the succeeding five years, the government debt should approach \$300,000,000,000, the volume of demand deposits should rise by nearly \$60,000,000,000 and that of money in circulation by \$17,000,000,000, the answers would probably have been nearly unanimous that the price level would rise to fantastic heights. In no previous war was there even an approximation of this increase in the volume of monetary purchasing power with such a relatively small rise in prices. A discussion of the reasons for this will be postponed until the chapters dealing with the value of money, but the fact

bears emphasis that by all historical precedent the citizens of this country might well have expected tremendous price increases by the end of the war.

Prices of Commodity Groups

As explained above, the purchase of government bonds by the banking system created new supplies of money which were spent originally by the government. Later this money circulated, and provided a source of much larger monetary incomes which, in turn, were spent on goods and services or on war bonds or other securities, or were merely hoarded. A large part, of course, was spent for consumers' goods—clothing, food, furniture, and similar items—and, since many of these were in short supply, there was a strong tendency for their prices to rise. The Office of Price Administration was established to provide and enforce maximum prices, so to a large extent the rise in the price level is the rise in individual prices allowed under various circumstances by that agency.

In this chapter we are concerned more with the actual movements of prices than with the theoretical aspects of why these movements took place or with the problems of the OPA in controlling them. These price movements form the background for the problems of international monetary arrangements following the war. The price changes in the United States are summarized briefly below.⁵

TABLE 69

PRICE CHANGES FROM 1939 TO 1945

(Annual averages, index numbers based on 1939 as 100)

Year	All Commodities	Farm Products	Foods	All Other
1939	100.0	100.0	100.0	100.0
1940	101.9	103.7	101.2	102.1
1941	113.1	126.2	126.4	109.6
1942	128.1	162.2	140.0	117.4
1943	133.7	187.7	151.4	119.3
1944	134.8	188.8	149.0	121.1
1945	137.2	196.2	151.4	122.6

⁵ Figures in this table are converted from Bureau of Labor Statistics index numbers based on 1926. The BLS wholesale price level index and indexes for numerous groups and subgroups of commodities making up the general index are published in several sources, including *Federal Reserve Bulletins*.

The apparent percentage of price rise depends upon what year is chosen from which to measure the price changes. The year 1939 is chosen in this table because it was the year in which hostilities started in Europe and thus just before large foreign buying began to lift prices in the United States. Measured from the 1939 average, all commodities cost 37.2% more at wholesale on the average in 1945 than in 1939. This over-all index includes widely divergent price movements. Farm products rose in price by 96.2%, foods by 51.4% and all other commodities 22.6%. Some individual commodities (as a result of price ceilings) had virtually the same wholesale prices in 1945 as in 1939, and a few were below the 1939 levels.

The different rates of change in various prices resulted in many changes in the relative well-being of different groups of the population. Farmers, for example, enjoyed greatly expanded incomes, in spite of higher costs, because of the more rapid rise in farm prices and increased farm output. Corporations selling war items generally received many more dollars of profit than they did prewar, partly from price rises and partly from larger production. Wage earners also, in general, obtained more dollars of income for a variety of reasons, such as higher wage rates, "upgrading" to job classifications with higher pay, and overtime rates. White-collar workers in general did not find their incomes rising along with the cost of living because their wage rates did not rise as much nor did they work the overtime hours.

The cost of living, it might be pointed out, is not the same thing as the wholesale price level. Government control of prices succeeded in holding the price rises in consumer-bought items well below the rise of prices in general. The Bureau of Labor Statistics index of consumers' prices, which is a measure of the cost of living for moderate-income families in large cities, rose 26.3% from 1939 to 1944. This is a weighted average of the following price increases:

Food	43.0%
Clothing	38.1
Rent	3.7
Fuel, electricity, and ice	10.9
House furnishings	34.6
Miscellaneous	20.5

In contrast with World War II, the Bureau estimates that this index rose 72.4% between 1914 and 1919. Similarly, price rises in general were much more severe during and immediately after World War I.

Foreign Price Levels

A comparison of the price rise in this country with those in other countries is made in Table 70. It appears that the price control measures adopted in the United States were signally successful among the major nations, only Germany, with its totalitarian controls, showing a smaller increase. That the inflationary effects of war are not restricted to the belligerents is shown by the figures for Sweden and Argentina. Only in China, however, does it appear that rising prices and increasing money supply got out of hand during hostilities and fed each other until fantastic prices were reached, as happened in Russia and Central Europe after the last war.

TABLE 70
WHOLESALE PRICE INCREASES
IN SELECTED COUNTRIES,
1939-1944

Country	Percentage Rise	
	From January- June, 1939 to June, 1944	From End of 1942 to June, 1944
Germany	10	2
United States	36	3
Canada	40	6
Japan	57	16
Great Britain	70	3
Sweden	80	1
Argentina	106	10
France	153	24
China (Shanghai)	10,295 ¹	411 ¹

¹ To April, 1944.

Source: *Fourteenth Annual Report*, Bank for International Settlements, for year ending March 31, 1944.

Production

Since price rises accompany scarcities of goods, as well as increases in money supplies, it is pertinent to observe the trends of production in various countries during the war years.⁶ Some countries suffered severely from destruction and occupation, so that necessities of life became very scarce. The Balkan countries and Italy are examples,

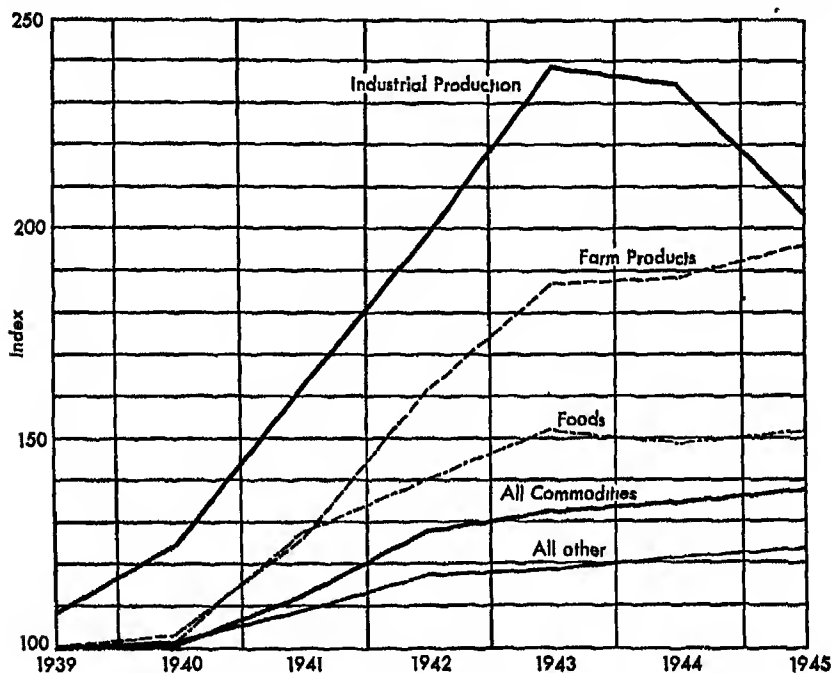


FIG. 41.—Indexes of Industrial Production and Wholesale Prices of all Commodities, Farm Products, Foods, and all other Commodities. (Industrial production, 1935-1939 = 100; prices, 1939 = 100.)

where prices (black market, if not official) rose severely. The military mobilization of large numbers of workers deprived industry and agriculture of enough labor in places to sustain output at prewar levels. The loss of two and a half million Frenchmen as German prisoners, forced laborers, or as "underground" fighters, is estimated to have reduced French production in 1943 to not more than 70% of its prewar volume—some estimates are much less—and less than half of

⁶ *Fourteenth Annual Report*, Bank for International Settlements.

this was allowed to remain in France. Neutrals like Sweden and Switzerland lost production for normal foreign trade and paid roughly double for their imports. On the other hand, industrial production in the United States rose to nearly 240% of the 1936 level, reflecting the absorption of the unemployed and women workers, longer hours, and other factors. As a result, consumption of most things remained as high as or even increased over prewar levels. Except for commodities not produced at all (mainly consumer durable goods), the American citizen had a higher standard of living on the average during the war than before. He spent as much on consumption and saved more than ever before.

The Case of France

The fall of France and the occupation of the country by the Germans had several aspects of interest in the financial field. The decline of production, half of which perhaps was being "exported" to Germany without offsetting imports, greatly impoverished the country. In addition, the financial burden of occupation was severe. Various types of such payments from the French government to Germany totaled 855 billion francs from 1940 to August, 1944.⁷ Since these sums, added to the regular governmental costs, were far in excess of receipts, the government borrowed heavily. During the period of occupation, the government obtained 32% of its funds from taxation, 28% by borrowing from the Bank of France, and 40% by borrowing elsewhere. As notes are widely used in France, the Germans usually withdrew, in the form of notes, the credits turned over to them at the Bank of France. Hence, the note circulation increased, by the end of the period, by very close to the same amount as the loans from the Bank to the French government. "From the beginning of the war up to the day after liberation, advances to the State have increased by 496 billion. During the same period, the circulation advanced from 142 billion to 632 billion, *i.e.*, it increased by 490 billion."⁸

These enormous government disbursements also tended to increase bank deposits, as the notes were deposited by some of the recipients. Bank deposits at the six large banks in France more than doubled between 1940 and October, 1944, rising from 76 billion

⁷ *Annual Report, 1944, Bank of France.*

⁸ *Ibid.* Quoted in *Federal Reserve Bulletin*, June, 1945.

francs to 158 billion. Deposits in the savings banks at the end of 1944 had increased to nearly 168 billion from 69 billion at the end of 1940. Such a large volume of money in the hands of the public also created high prices for securities. Early in 1943 the average of stock prices was 651% of the 1938 level; later the average fell but rose again until liberation. At these high stock prices, many firms floated new issues and obtained what funds they needed in this manner rather than in loans from the Bank of France or other banks.

The Case of England

The Bank for International Settlements has concisely summarized the manner in which the United Kingdom mobilized resources for the war.⁹

A comparison between the figures for 1938 and those for 1943, the latter reduced to pounds of 1938 purchasing power, shows that the increase in expenditure has been covered by

(a) an expansion of 22 per cent in the national income as a result of longer hours of work, disappearance of unemployment, more employment of women and also more thorough nationalization of the production and distribution of goods and services;

(b) a cut in consumption by about 20 per cent;

(c) reduced outlay for maintenance and replacement (since in 1943 such outlay did not reach the sum allowed for "depreciation, etc.," there was in that year a draft on domestic capital which has been estimated at 126 million pounds sterling);

(d) drafts on foreign investments. In order to carry on the war, the United Kingdom has unstintingly utilized its resources from past investments and has also entered into debt. During the war years to the end of 1943 "total overseas disinvestments" came to 3,000 million pounds sterling; this figure does not include amounts received under lend-lease but comprises, for instance, the repayment of Indian indebtedness in London and liabilities incurred to the Government of India (in all some 1,200 million pounds sterling by the autumn of 1944), the funds thus obtained being used, however, for very much the same purpose as lend-lease aid.

The last-named development is of considerable importance to postwar monetary developments, owing to the tremendous switch involved in the flow of interest and dividend payments. Whereas prior to the war, Great Britain acquired claims to large sums of foreign exchange as income from foreign investments, after the

⁹ *Fourteenth Annual Report*, quoted in *Federal Reserve Bulletin*, Sept., 1945, p. 877.

war she not only lacked this income but, in fact, owed sums abroad which will constitute a demand for foreign exchange rather than a supply. Other things being the same, then, Great Britain must export sufficient goods to acquire this exchange and will not have funds to pay for the prewar volume of imports. This problem is taken up later in connection with proposals for postwar monetary organization.

This shift of Great Britain from a great creditor nation to a debtor was accomplished in a variety of ways. Especially in the early years of the war, Great Britain purchased large quantities of war materials and food from her allies and the United States. The British government owned gold reserves and bank balances abroad that could be converted into dollars and other currencies to pay for these imports for a while but not for long. British gold reserves fell from 1.7 billion dollars in 1939 to 150 million in 1941. In order to obtain dollars, the British government bought American securities from British subjects (for British government bonds) and sold the securities in the United States or used them as collateral for loans from the United States, the Reconstruction Finance Corporation being a lender. This was one mechanism used in the process of "disinvestment." From June, 1939, to June, 1945, British holders sold back \$580,000,000 worth of American securities to Americans.

Again, South African debts to England were paid in gold which was used to acquire foreign exchange. The Malay States provided dollars in exchange for sterling debts in London. In other words, other countries acquired large sterling balances in London in exchange for goods sent to Britain or for foreign exchange. Sterling resources of India alone were estimated at approximately 1.4 billion pounds by the end of 1944.

The total wartime "overseas disinvestment" of the United Kingdom probably exceeded 3,700 million pounds sterling in round figures by the end of 1944. Allowing for the utilization of 1,100 million pounds sterling in original gold and dollar reserves and for somewhat over 700 million sterling securities repatriated, the accumulation of new sterling balances by overseas countries (including the Empire) would approach 2,000 million. The addition of prewar balances (of, say, 300 million) and of liabilities already discharged through the repatriation of sterling securities would raise the total to around 3,000 million pounds sterling, of which around ninety per cent would be directly connected with the war.¹⁰

¹⁰ Bank for International Settlements, *op. cit.*

Other figures carrying through to June, 1945, are shown in Table 71.

TABLE 71

MAJOR ITEMS IN BRITAIN'S OVERSEAS
DISINVESTMENT: BY COUNTRIES,
SEPTEMBER 1, 1939-JUNE 30, 1945
(millions of pounds)

	Increase in Foreign-owned Sterling Balances	Loans to British Gov't	Sales of British Investments	Total ¹
India	1,020	30	325	1,375
Egypt	325	...	15	340
Canada .....	....	140	195	335
United States .....	....	67	175	242
South Africa	20	...	135	155
Australia	90	...	65	155
Argentina	70	...	35	105
Eire	100	...	...	100
Palestine	95	...	...	95
All others	970	23	55	1,048
Total	2,690	260	1,000	3,950

¹ These figures understate the British cash disinvestment vis-à-vis the United States and Canada because no allowance is made for the large net sales of gold and dollars to these countries. On the other hand, the disinvestment vis-à-vis India, South Africa, Malaya, and Australia is overstated because no allowance is made for net dollars and/or gold received from these countries. No breakdown is possible. (Note from original.)

Source: Arthur I. Bloomfield, "The British Balance of Payments Problem," Princeton University, International Finance Section, 1945 (*Essays in International Finance*, No. 6) p. 9.

The American Balance of Payments

It was unusual that during the war the United States exported billions of dollars' worth of goods and yet lost gold. The reason was that most of the exports were lend-lease materials which required no payment. At the same time, imports, largely from Central and South America, did require payment. Owing to restrictions on exports from the United States, these countries obtained dollar funds which they could not spend normally. Hence, they left the funds as bank balances, bought securities, or bought gold.

Lend-Lease

As the war reached its maximum in annual costs the idea spread among the United Nations that those countries nearest the battle lines should furnish manpower and services while those countries least subject to bombing and destruction should concentrate on production of munitions. This was the basic idea of lend-lease; that supplies produced by Americans and used by British or Russian soldiers were not exports in the usual sense and consequently that such supplies should be lent or leased subject to postwar arrangements of settlement.

The cost of items lend-leased to our allies exceeded \$40,000,000,000. Enormous shipments in 1944 accounted for about \$20,000,000,000. Perhaps 10% of this total was received by the United States as reverse lend-lease. What exports of \$20,000,000,000 a year would have done to exchange rates is fairly obvious when we consider that our largest prewar exports were \$5,100,000,000 in 1929 and \$3,300,000,000 in 1937, and that our monetary gold stock about equaled \$20,000,000,000. In the absence of imports of equal value, we would have taken all of the world's gold or large debts, a situation which proved so disruptive during the 1920's.

Capital Movements

It is possible to trace the net effects of these movements of goods—large lend-lease exports, smaller “regular” exports and paid-for imports—upon gold movements and deposit balances, although the wealth of foreign trade statistics ordinarily available was partially suppressed during the war. Total capital movements to the United States between January, 1939 and June, 1945, amounted to approximately \$3,000,000,000, which arose from an inflow of foreign banking funds of \$3,800,000,000.¹¹ Selected figures for gold reserves and gold movements to illustrate the present discussion are presented in Table 72. The figures for the gold reserves of the countries selected indicate how gold was accumulated by the United States and neutral countries. The figures for gold movements show the large flow of gold to the United States during the early years of the war when various nations were buying large quantities of materials in the

¹¹ *Federal Reserve Bulletin*, June, 1946, p. 689.

United States, and the dwindling of this gold flow after American entrance into the war until finally the flow actually was reversed.

Invasion Money

Another factor, of unmeasured importance, is the occupation currency used by American forces abroad, along with expenditures made by American troops in friendly countries. An invading army, especially a liberating army, needs money to spend for items of current consumption—food, billeting troops, services, and so forth. American troops took with them to North Africa in 1942 "yellow seal" dollars. These appeared to be regular American dollar bills, except that the seal was printed in yellow rather than in the green ordinarily used on Federal reserve notes or in the blue on one-dollar silver certificates. These notes were charged against War Department funds and the holders presumably have claims to dollars in the United States. In addition, soldiers spent large sums abroad.

With several million American soldiers abroad, the requirements for pounds sterling, Australian pounds, Chinese dollars and Indian rupees have assumed large proportions. It was estimated some time ago that our troops in Australia were spending something like \$200 million a year for goods and services, over and above reciprocal lend-lease aid received from the Commonwealth. At the height of the North African campaign, the allied forces are estimated to have spent in excess of \$400 million a year in Egypt alone. . . . The heavy expenditures of our troops in India have been an important source of dollars for the sterling area exchange pool maintained in London.¹²

Foreign Balances

The result of various transactions mentioned above was that England and the United States obtained supplies from most of the rest of the world in exchange for claims to pounds sterling and dollars. The pounds and dollars could not be used for the time being because of restrictions on exports from the United Kingdom and the United States. Not only were exports unavailable from these two countries, but the ordinary freedom of the holders of pound and dollar balances to purchase third currencies was also restricted. Professor Buchanan estimated the amount of such claims at the end of 1944 at about \$10,000,000,000 against the United States and £2,000,000,000 against the United Kingdom, or a total of about \$18,000,000,000

¹² *National City Bank Letter*, August, 1944.

TABLE 72
GOLD RESERVES OF SELECTED COUNTRIES AND MOVEMENTS OF GOLD
TO THE UNITED STATES FROM SELECTED COUNTRIES,
1938-1945
(millions of dollars)

Year	Gold Reserves				Gold Movements from:				
	United States	Argentina	Brazil	South Africa	Switzerland	Total	United Kingdom	Mexico	Other Latin America
1938	14,512		32	220	701	1,973.5	1,208.7	36.4	65.2
1939	17,644		40	249	549	3,574.1	1,826.4	33.6	57.0
1940	21,995		51	367	502	4,744.4	633.0	29.8	128.2
1941	22,737		70	366	665	982.3	3.7	16.7	61.8
1942	22,726	658	115	634	824	315.6	1.9	40.0	39.6
1943	21,938	939	254	706	964	68.9	.1	— 3.2	13.4
1944	20,619	1,111	329	814	1,052	— 845.3	— 695.4	— 109.6	— 108.5
1945	20,065		354	914	1,104	— 106.2	.1	15.0	— 41.7
									53.1

Notes: Figures not shown for Argentine gold reserves are not comparable to those shown. Total gold movement to the United States is the total net movement not only from the four sources listed but from all countries.

Source: *Federal Reserve Bulletin*, June, 1946, pp. 687-88.

plus whatever credits would be allowed for military currency in the hands of foreigners.¹⁸ He points out that this \$18,000,000,000, which continued to grow through the remainder of the war, was at that time already greater than the total lend-lease shipments up to March 1, 1944, five times the total American exports in the good year of 1937, and about twice as large as all merchandise shipments into Continental Europe in 1938. At the end of the war, therefore, the United States, and particularly the United Kingdom, faced a problem of considerable magnitude: the arrangements necessary for the spending of these tremendous funds for domestic goods or foreign exchange. This problem is discussed in the following chapter, but it should be preceded by some notice of exchange rates during the war.

Exchange Rates

Fluctuations in exchange rates were rigidly controlled by governments during the war period. Foreign exchange control was part of the war mobilization of the belligerents and became necessary for the neutrals. Each country, in one way or another, rationed the available foreign exchange so that purchases from foreigners could be confined to war-essential goods. The sterling area exchange pool referred to above was a pooling of foreign exchange, such as dollars, that came into the hands of subjects of the United Kingdom and the colonies and other cooperating countries. If American imports, for example, provided dollars for Indian exporters, the dollars were subject to control, and might not be used freely to purchase other currencies or goods anywhere in the world. They were generally exchangeable for other currencies controlled by the sterling area but were restricted as to sale for other currencies. In this way the United Kingdom could guarantee that such scarce foreign exchange would be used for the purchase of imports that were most urgently needed for war purposes.

Even before the war, as a result of different degrees of devaluation, there existed certain more or less well-defined blocs of countries whose exchange rates were tied together. The main blocs were the

¹⁸ Norman S. Buchanan, *International Investment and Domestic Welfare*, New York, Henry Holt and Co., 1945, p. 195.

sterling area, the dollar area and the German-dominated countries; to these may be added the Japanese-dominated yen area, after the outbreak of war. Before the war Japan, the Scandinavian countries, Portugal, Greece, and Bolivia maintained relatively fixed rates with the British pound. As the pound fluctuated with the dollar, these currencies fluctuated with it. These countries maintained balances in London which they sold to traders at fixed prices in local currencies to meet international obligations. Under wartime exchange control, however, such transactions were restricted.

A rate of \$4.03½ was maintained between the pound and the dollar. This official rate superseded the "free" rate which averaged \$3.83 in 1940, to which it had fallen from nearly \$5.00 in 1937. This rate gave a crossrate for francs of 200 francs to the pound and approximately 50 francs to the dollar (49.57). These rates were maintained, with some variations, for transactions between England or the United States and possessions still under French control. British and American soldiers took with them for the invasion of France in June, 1944, special franc notes printed by their own governments. By subsequent agreement, the Provisional French Government provided the liberating forces with francs at the rate of 200 = £1 and 49.57 francs = \$1.00.

After the war, it became necessary for the French again to reduce the gold value of the franc, in order to remove a drain of gold and to expand exports. In December, 1945, the franc was devalued to .8410 of a cent, or 119.106 to the dollar and 480 to the pound. The French government adopted a buying rate of 118.9 francs per dollar and a selling rate of 119.3 francs per dollar. There was thus a devaluation of about 58% from the wartime level of controlled rates. A large part of the resulting gold profit was turned over to the French exchange stabilization fund for the acquisition of foreign exchange and imports.

Most of the countries in the Western Hemisphere belonged to the dollar bloc, in the sense that they had large dollar balances in New York. They drew drafts against these balances in order to buy goods from each other or from other countries. These transfers of dollar balances were relatively free during the war, except for those countries whose balances were frozen by the United States gov-

ernment. These frozen balances belonged to the governments or nationals of enemy countries or those dealing with enemy countries, such as Argentina.

The Germans during the 1930's developed complicated clearing arrangements with their satellite countries. By the device of "blocked marks" they required creditors to spend their marks, obtained by selling goods to Germans or as interest on German securities, for German goods. In this way, the Germans protected their foreign exchange balances for imports required by preparation for war. More complicated were their multilateral clearing arrangements, whereby a country with an export surplus to Germany would be paid with funds of a country with an import surplus from Germany. These arrangements were utilized during the war, but the Germans tended to import from all their satellites during hostilities, and were indebted to all of them.

XXIX

INTERNATIONAL COOPERATION: THE BANK FOR INTERNATIONAL SETTLE- MENTS AND THE BRETTON WOODS PROPOSALS

THE REASONS for the breakdown of the international gold standard in 1931 and for international restrictions on trade and capital movements have been described in preceding chapters. However, the proposals that have been made to assist the postwar restoration of production and trade stem from these difficulties, which may therefore be reviewed very briefly.

Résumé of International Financial Difficulties

It will be recalled that the disruptions to trade and price levels during and after World War I left a serious problem of establishing and maintaining new exchange rates. Britain restored the old gold parity, with resulting deflationary tendencies that stemmed from her difficulties in keeping adequate gold reserves for the credit system. France, on the other hand, eventually devalued drastically, and, when funds moved to Paris, credit stringency was forced on England as the result of gold losses. The growth of large fluid international balances resulted in their "flight" from capital to capital, and the losses of gold caused successive abandonments of the gold standard.

The international balance of payments during the 1920's depended heavily upon the flow of loans, largely from the United

States, and, when this stopped with the stock-market crash and depression, international payments were unbalanced and contributed to the gold movements. Moratoria were declared for international debts. During the depression, a wave of competitive devaluations took place in the attempts of several countries to maintain employment by stimulating exports. Restrictions on imports, either to protect gold reserves or employment, or both, depressed international trade and contributed to the depression. Nations adopted control of foreign exchange and parcelled it out to importers as national interest seemed to dictate. Import quotas and other trade restrictions were adopted. As a result, bilateral trade agreements grew up whereby pairs of countries attempted to increase their trade with each other by barter.

The Bank for International Settlements

Prior to the depression there was a development that might have prevented many of the economic mistakes of the 1930's. It did not, for reasons to be mentioned. This was the establishment of the Bank for International Settlements in 1930. The Bank was an outgrowth of the reparations problem. Reparation payments by Germany created exchange problems in that large amounts of pounds, francs, and other currencies had to be purchased for marks. In principle, the Germans might have been able to collect and turn over marks to their creditors, who might then have spent the marks for German goods. However, the creditor nations did not want large imports of German goods. The payment of interally debts to the United States created similar exchange problems.

The plan drawn up by the Young Commission in 1929 proposed an international bank which would act as a central clearing agency for these payments. The Germans, for example, would pay funds into the international bank and her creditors would draw on them. In addition, it was proposed that the BIS become a true bank, with the power to make loans, provide reserves for central banks, and, in general, to act somewhat in the manner of a world reserve bank. However, the interested nations could not agree on such a grandiose scheme and the BIS was set up principally as a transfer agent, but with the idea that it might develop into something much more important.

Unfortunately, the United States did not officially support the Bank. According to its charter, the Bank was to be established and owned by the central banks of Belgium, France, Germany, Great Britain, and Italy; in addition a Japanese banking group and an American group consisting of J. P. Morgan and Co., the First National Bank of New York, and the First National Bank of Chicago contributed to its capital. The Federal reserve banks did not participate for the legal reason that they had no authority to buy shares. Similarly, they have not exercised their rights under the charter to choose directors of the Bank, although votes were allotted to the central banks of the participating countries.

Powers and Operation

The powers of the Bank were not broad. Before any operation could be carried out in a given market or in a given currency, approval of the central bank of that country had to be obtained. Stabilization operations, for example, would therefore be in conformity with the policies of the countries involved. The Bank was limited to dealings for its own account in currencies on the gold or gold exchange standards; it could:

1. Buy or sell gold coin or bullion.
2. Hold gold under earmark at central banks.
3. Accept custody of gold for central banks.
4. Lend to, or borrow from, central banks on approved liquid securities.
5. Discount, rediscount, buy, or sell bills of exchange and other short-term obligations.
6. Buy and sell foreign exchange.
7. Rediscount for, or at, central banks.
8. Make arrangements whereby central banks would make transfers between them of balances at the Bank.

On the other hand, the Bank could not accept bills of exchange drawn on it or lend to governments.

The operations of the Bank can be summarized by a tabulation of its earning assets on March 31, 1940:

	(Swiss Francs)
Sight funds at interest	16,257,974
Commercial bills and bankers' acceptances	93,510,934
Treasury bills ¹	68,412,117

¹ Rediscountable.

Time funds at interest	17,371,232
Other treasury bills	84,809,098
Railway, postal, and other bills and investments	121,829,515

It will thus be seen that the Bank restricted itself to short-term, highly liquid assets. In acquiring these assets, it was the policy of the Bank to

. . . move capital from markets where it is superabundant to markets where it is needed . . . to move capital from markets of low interest rates to markets of high interest rates . . . to assist commerce and agriculture in those centers where the interest rate is excessive . . . (and) to be helpful to currencies which are temporarily or seasonally weak. In different parts of the world there are certain seasonal demands for financing, and these demands customarily involve a strain on the currency. Hence, by advancing short-term funds in these periods to the local central banks, we accomplish the double object of relieving the exchange strain and of putting capital where it is needed.²

In addition a clearing system between central banks was put into operation. Central banks could transfer their deposits at the BIS in the same way as funds are moved from bank to bank at a reserve bank.

The widespread abandonment of the gold standard in 1931 seriously reduced the operations of the bank, as its charter restricted it to operations in gold or gold exchange moneys. It had little opportunity to expand its clearing operations in the face of the drying up of trade and the growth of bilateral agreements, particularly in Central Europe. Its primary function became that of advising adhering central banks. Consequently, it cannot be said that much was accomplished by the Bank, but it is an important chapter in the evolution of banking institutions. The reasons why the Bank was unable to develop into a powerful source of loans and stability of exchange rates have been summarized as follows: ³

1. The Bank was originated out of the political problem of reparations.
2. The United States government did not participate.
3. The Bank had neither the authority nor the resources to stabilize exchange rates.
4. It was the agent of central banks and was not fully supported by governments.

² G. W. McGarrah, *Proceedings, Academy of Political Science*, Jan., 1931, p. 33.

³ Eleanor Lansing Dulles, *Foreign Policy Reports*, Sept. 1, 1944.

5. Its funds were limited.
6. Its development coincided with a period of economic warfare.
7. Its leadership was cautious and tentative.

Stabilization Funds

Another step in the direction of international monetary cooperation was the establishment of the various stabilization funds, to which reference has already been made at several points. Originally, the stabilization funds were established to counteract short-run fluctuations that otherwise would have taken place in foreign exchange markets after countries had given up the gold standard (which automatically pegged exchange rates). The large movements of short-term balances from one money center to another not only had led to the abandonment of the gold standard, through loss of gold from the central banks of the countries involved, but also had demonstrated how wildly exchange rates could fluctuate when such movements took place without the benefit of gold points to hold exchange rates. In addition, as imports and exports varied, seasonal supplies of or demands for specific currencies would have caused a movement of exchange rates to whatever points were required to equate supply and demand.⁴

Exchange Equalization Account

The Exchange Equalization Account was established in London for these reasons when England abandoned gold in 1931. As it developed in that case, the low value of the pound following abandonment of gold led to a considerable movement of funds to England (representing purchases of pounds with other currencies), with the result that the pound tended to appreciate. This appreciation would eliminate the advantage enjoyed by British export industries, and in any event might not be permanent. The function of the Account, therefore, was to provide enough pounds to keep their value down in terms of other currencies.

The Account was established with government securities, which were promptly sold to banks for pound deposits. By selling these

⁴ Under the gold standard, international bankers would anticipate these fluctuations and supply the currencies expected to be in demand for seasonal reasons by shipping gold to those countries. Without the restrictions of the gold points, such operations involved considerable risk because of the possibility of intervening changes in the level of rates.

pounds the Account came into possession of foreign balances, which in turn were converted to gold for deposit at the Bank of England; the Account's supply of pounds thereby was replenished. Thus the demand for pounds resulted in gold imports in much the same way as such a demand would have under the gold standard. One of the objections to the gold standard had been that this movement of gold was deflationary for the losing country and inflationary for the receiving country. Hence, the problem was to keep the gold from becoming bank reserves and contributing to an expansion of loans and deposits. The Bank of England handled this problem by retiring some of the fiduciary issue at about the same rate as it granted deposits to the Account for gold.⁵

Stabilization Fund

In the United States, the Stabilization Fund was established in 1934 with \$2,000,000,000 of the gold profit which resulted from the revaluation of the gold stock. The Fund then obtained dollars by depositing gold certificates at the reserve banks in exchange for balances. The United States, too, experienced a great demand for dollars, and, as the Fund sold these dollars, which were then spent for American securities or goods, they augmented the already large volume of bank reserves. The method adopted in the United States to overcome this tendency was that the Treasury paid for additional gold imports with funds acquired through the sale of securities, but did not deposit an equivalent amount of gold certificates at the reserve banks.

International Agreement

It was therefore apparent that even with stabilization funds gold movements were likely to affect domestic money markets seriously. This situation led to a growth of international cooperation between the stabilization funds. The Tripartite Agreement, mentioned in Chapter XXVI, was an example of this development. Under this agreement, the United States, England, and France agreed to utilize their respective stabilization funds to peg existing exchange rates and to maintain levels of rates that were thought to reflect price-level

⁵ The fiduciary issue is the notes secured by government bonds rather than by gold held by the Issue Department of the Bank.

parities between the various countries. Other countries later joined the agreement and widened the area of control and cooperation. Under this arrangement, for example, on a certain day the American Stabilization Fund might sell dollars for pounds sterling in order to prevent a fall in the New York sterling rate. Rather than allow its holdings of sterling to accumulate, however, the Stabilization Fund would then exchange its sterling balances with the British Equalization Account for gold. In the same way, if the Stabilization Fund wanted to meet a demand for pounds that was threatening to drive up the exchange rate in New York, it would obtain sterling balances owned by the Equalization Account in London in exchange for gold.

Other Forerunners of Bretton Woods

Numerous proposals were made during the war for postwar organizations, more or less like the BIS, designed to stabilize exchange rates by lending currencies which were in great demand. The two leading proposals were the Keynes plan, by John Maynard Keynes, and the White plan, by Dr. Harry White of the United States Treasury. Both plans were suggested in 1942 as tentative proposals for discussion. They aroused considerable debate among financiers and economists. Experts from various United Nations joined in a statement supporting agreement on some proposal such as these and the interested governments worked towards an international agreement. After preliminary conferences and meetings, an international conference of forty-four nations met at Bretton Woods, N.H., to establish a postwar plan for the control of international currency fluctuations.

The Keynes Plan

The Keynes plan was relatively simple. It provided that the central bank of a country with an export balance would pay for the exports, while the central bank of a country with an import balance would collect for the goods from the purchasers. If the export and import surpluses were temporary, this device would remove the extra demand for the exporter's currency. Later on, a surplus in the opposite direction would permit the liquidation of the differences. A distinctive feature of the plan was a new international monetary unit called a *bancor*, which was to have a fixed value in gold. Each country was

to tie its currency to bancors and maintain a constant exchange rate. The trade accounts between central banks would be carried in bancors. Limits were to be set to the amount of imports that could be financed in this fashion; each country would be assigned a quota. In other words, the bancors would provide some elasticity by which trade could be temporarily unbalanced in one direction without distorting exchange rates, on the assumption that unbalance in the other direction would take place. If, on the other hand, existing exchange rates were out of line, so that trade tended to flow in one direction persistently, a mechanism would be provided allowing countries to alter their rates for bancors and thus for other currencies.

The White Plan

The White plan differed in that the various nations were to contribute to a common pool of gold and currencies. This pool of currencies was to be available to the contributors in the ratio of their contributions. For example, if the United States should contribute one-fourth of the total, it could draw on one-fourth of the other currencies or gold in order to meet unfavorable balances of trade, without losing gold from the American banking system. The plan also provided for international monetary units known as *unitas*, in which the accounts of the fund would be kept. For its contribution, the United States would be entitled to a certain number of *unitas*, which could be taken in the form of the other currencies or gold, or, more simply could be turned over to creditor countries in discharge of its obligations.

The Bretton Woods Agreement

The discussions of the Keynes and White plans brought out the need for postwar loans of a long-term nature as well as short-term commercial loans and exchange stability. Consequently, the plan agreed upon by the forty-four nations at Bretton Woods contained two proposed institutions, a Fund and a Bank. The former is designed to encourage international trade by helping to reduce trade barriers and to stabilize exchanges; the latter is designed to encourage international loans for productive purposes.

The International Monetary Fund

The core of the Fund arrangement is that each nation agreed to adopt a gold value for its currency as soon as possible and to contribute gold and its own currency to a common fund. The contributions of the member nations, as originally agreed upon, are listed in Table 73, for the Fund and the Bank. The quotas to be contributed were the subject of negotiation and debate at the conference, but were basically arrived at by consideration of each country's national income, international trade, and other similar indices, modified for changes brought about by the war. The total contributions to the Fund were originally set at \$8.8 billion. Each nation may borrow gold and foreign exchange from the Fund up to the amount of its own contribution. One-fourth of each nation's quota is to be paid in the form of gold, the rest in the form of its national currency. The United States' quota was paid in February, 1947. As specified in the Bretton Woods agreement, \$1.8 billion of the gold profit created by devaluation in 1934 and subsequently held in the Exchange Stabilization Fund was to be used in making part of the payment. The remainder came from general Treasury funds. The \$1.8 billion was transferred to the general account of the Treasury and \$687,500,000 in gold (one-fourth of the quota) was turned over to the International Monetary Fund. The other three-fourths of the quota were paid in the form of non-negotiable non-interest-bearing demand notes. Consequently, the remainder of the gold from the Stabilization Fund became free gold available to the Treasury.

By use of the Fund, temporary unbalance of the supply and demand for foreign exchange in a money center can be met by loans from the Fund without a disruption in the movements of gold. Each year, for example, when the Canadian wheat crop is exported there is a strong demand for Canadian dollars, or conversely, commercial drafts drawn on European centers are plentiful. Such a movement of goods could be financed by the Fund without a strain on the exchanges, in much the same way that the Federal Reserve System provides funds for seasonal busy periods in the United States without a tightening of credit conditions in New York.

TABLE 73

QUOTAS OF THE FORTY-FOUR SIGNATORY
NATIONS TO THE BRETTON WOODS
AGREEMENT ¹

(millions of dollars)

Country	Fund	Bank
1. United States	2,750	3,175
2. United Kingdom	1,300	1,300
3. U.S.S.R.	1,200	1,200
4. China	550	600
5. France	450	450
6. India	400	400
7. Canada	300	300
8. Netherlands	275	275
9. Belgium	225	225
10. Australia	200	200
11. Brazil	150	105
12. Poland	125	125
13. Czechoslovakia	125	125
14. Union of South Africa	100	100
15. Mexico	90	65
16. Yugoslavia	60	40
17. Chile	50	35
18. Columbia	50	35
19. Cuba	50	35
20. New Zealand	50	50
21. Norway	50	50
22. Egypt	45	40
23. Greece	40	25
24. Iran	25	24
25. Peru	25	17.5
26. Philippine Commonwealth	15	15
27. Uruguay	15	10.5
28. Venezuela	15	10.5
29. Bolivia	10	7
30. Luxembourg	10	10
31. Iraq	8	6
32. Ethiopia	6	3
33. Dominican Republic	5	2
34. Ecuador	5	3.2
35. Costa Rica	5	2

¹ Final contributions differed somewhat from those agreed upon at Bretton Woods, as explained in the text.

TABLE 73 (Continued)

Country	Fund	Bank
36. Guatemala	5	2
37. Haiti	5	2
38. Honduras	2.5	1
39. Nicaragua	2	.8
40. Paraguay	2	.8
41. Iceland	1	1
42. Liberia .....	.5	.5
43. Panama .....	.5	.2
44. Denmark	(left for future determination)	

If fundamental changes should occur in a nation's economy that tend permanently to alter its export-import relationships, then the Fund would not be adequate. Like the prewar stabilization funds, the Fund could not permanently provide funds in one country. In this case, there is a provision for changing the rates gradually and cooperatively, rather than explosively as happened after 1931. In recognition of the fact that the first prewar rates would be the results of educated guess-work, it was provided that a member country could change its monetary gold value by 10% without the approval of the Fund, but larger changes must be approved, or membership given up.⁶ This provision is aimed to prevent competitive devaluations such as occurred in the 1930's. Presumably where exchange rates actually are out of line, and force unemployment on a country, such as they did in France after England and the United States devalued, the Fund would approve new rates.

If French production costs (wages and other items) for instance, happen to rise much above production costs in England, French producers will gradually lose their foreign markets—both in England and in other countries—to British producers. French producers will lose even in their domestic market, as their high cost goods are increasingly displaced by lower cost goods imported from Britain. If the basic maladjustment in the cost structure is not the result of a temporary condition, but reflects a fundamental and lasting change, French production will eventually decrease, unemployment will rise and monetary reserves will be drained by the deficit in the balance of payments. The French currency will tend to fall in value, speculators will rush to buy foreign exchange, and, in many cases, the resulting monetary depreciation of the French franc will

⁶ Nearly all of the adhering nations had adopted their current monetary values as the first official rates by the end of 1946.

be greater than what was really called for to correct the initial cost maladjustments. If an appropriate change is made in the value of the currency relative to the currencies of other countries before this train of circumstances is set in motion, much confusion and distress will be avoided and the necessary adjustment can be an orderly one.⁷

It was expected that the great postwar demands for goods for devastated countries and countries long cut off from normal supplies would create a great drain on the dollars in the Fund. In fact, there was criticism of the Fund on the grounds that the United States would contribute the largest quota but would have no need to borrow.

- The probable scarcity of dollars led to the restrictions placed on borrowing. Charges are made varying with the amount borrowed and the time involved. In addition, nations are required to restore their borrowings; that is, to repurchase their currencies previously sold. Nations that gain gold from trade balances are required to deposit half of the gain, under certain circumstances, with the Fund.

In summary, it may be noted that the establishment of the Fund in a sense is the re-establishment of the gold standard. However, there are fundamental differences. In the first place, although each nation is obligated to declare and maintain a gold basis for its money, the tie to gold is not too rigid. An original 10% variation is allowed, and larger corrections may be made by cooperation of the Fund. Thus gold is to be used as a means of settling balances, but each nation still will have considerable autonomy in establishing domestic monetary policies. The danger of temporary losses of gold and resulting credit stringencies is removed and the mechanism for adjusting to permanent dislocations is provided.

The prewar gold standard was unilateral, in the sense that nations adopted it as a domestic policy rather than as a means of international cooperation. A nation incurred no obligation that it could not discard to buy or sell gold at a fixed price. If the gold standard had a legal basis, as in the United States, the law could be repealed or amended. If devaluation appeared to be advisable for domestic reasons, the unfortunate effects upon other countries were not sufficient to change the practice. Under the Fund arrangement, the necessity for devaluation should be removed and the likelihood greatly diminished.

⁷ M. S. Szymczak, "Monetary and Credit Agreements Entered Into at Bretton Woods," *Federal Reserve Bulletin*, April, 1945, p. 310.

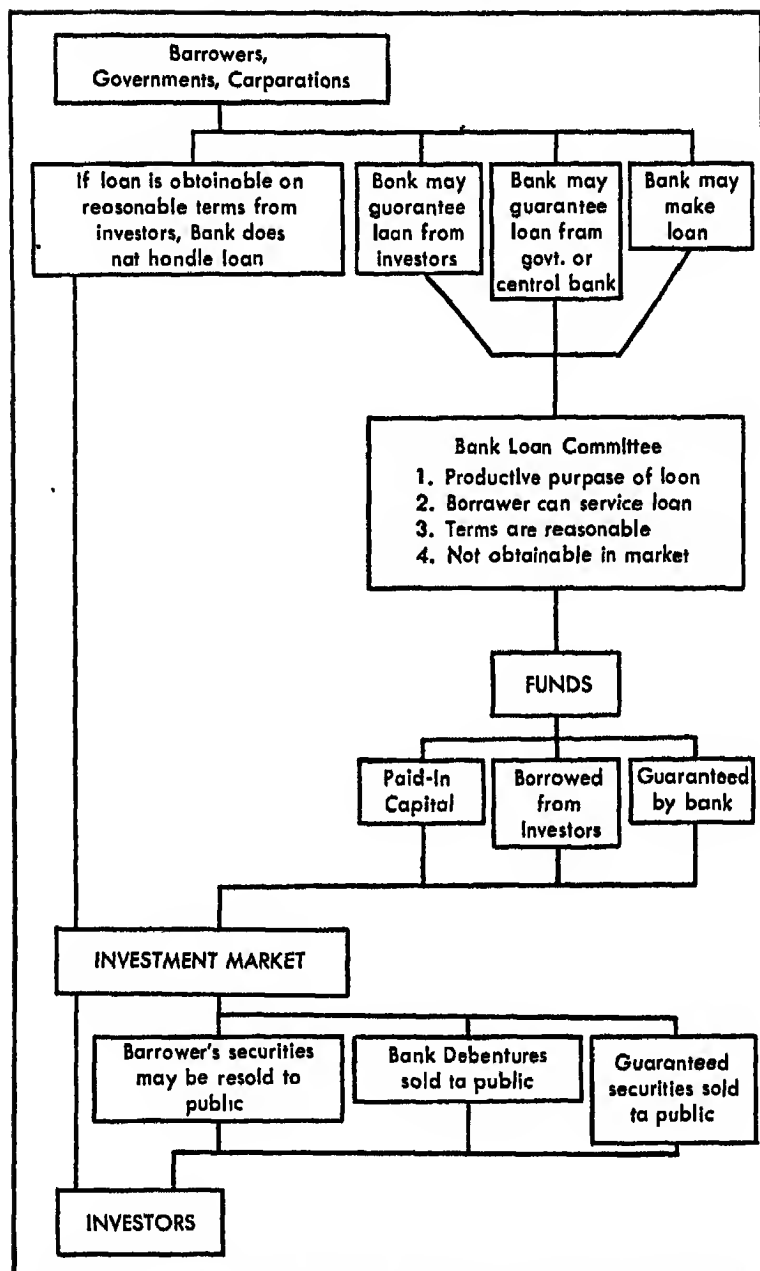


FIG 42.—Organization and Operation of the International Bank.

The International Bank

Hand in hand with the proposal for the International Monetary Fund went the proposal for the International Bank for Reconstruction and Development. The two institutions depend upon each other. International trade and stable exchange rates are not likely to exist unless there is adequate production. The restoration of productive facilities in many countries at the end of the war required international investment, and this is not usually forthcoming unless lenders are protected to some extent against fluctuations in the values of money. An investor who buys a foreign bond will lose part of his principal if the foreign currency is devalued relative to his own. If foreigners borrow by assuming obligations in other currencies, as is customary, their ability to repay may be destroyed by changes in the exchange rates. If the belga is worth 16 cents when a Belgian firm borrows by selling dollar bonds in New York, it will cost the firm about six belgas to pay \$1.00 in interest, but it would cost ten belgas if the exchange rate should change to 10 cents, and the loan might be defaulted.

The Bank was proposed as an institution primarily to guarantee international loans, although it also can make loans of its own funds. The restrictions which are placed upon the Bank and the requirements which must be met in its operations are ultraconservative. The Bank must determine that the loans are for productive purposes, in the first place. If the loans can be made through normal private channels, the Bank has no interest in them, but if productive loans cannot be placed otherwise, the Bank may guarantee the loans or itself make them. In addition, the loan must be approved by the government of the country of the borrower, and by the government of the country where the funds will be spent. A nation, city, or firm may wish to borrow for 30 years at 3% to restore a bombed out seaport, and private bankers may not be willing to handle the loan on these terms. Such a loan would be of the type that the Bank is established to facilitate. If the borrowers proposed to buy the equipment in the United States and such materials were scarce and inflation a serious problem, the United States could refuse to approve the loan unless the funds were spent elsewhere.

The Bank may not lend more than the sum of its capital, surplus,

and reserves. The capital of the Bank is provided by contributions along the same lines, but not in exactly the same proportions, as the contributions to the International Fund. Total capital was set at \$9.1 billion in the Bretton Woods agreement. Thirty-five per cent of this amount was the quota of the United States, as compared with 31% in the case of the Fund.

After the signing of the "Final Act" at Bretton Woods, the delegates from the forty-four nations dispersed for the purpose of obtaining the approval of their respective governments to the plan. Until a sufficient number of governments should approve it, the plan could, of course, not be put in operation. Organization meetings, where officials were chosen and similar work was disposed of, took place early in 1946 following the adoption of the plan by many of the countries involved in the early discussions. The Bretton Woods meeting, as such, should be thought of as one of the steps in the formation of the United Nations. There are quite as many political questions involved in the establishment of the Fund and Bank as there are financial, although they lie outside the scope of this book. But the conference in New Hampshire was not an isolated meeting; rather it was the financial side of the meeting of the "Big Three" during the war and the conferences on food, United Nations relief, aviation, and the organization conference of the United Nations held at San Francisco.

Officials of the Bank and Fund were chosen and arrangements were made to commence their respective operations during the spring and summer of 1946. The early situation was marred by the failure of the Russian government to participate as had been planned at Bretton Woods. The diminishing interest of the Russians in the two organizations is indicated by the fact that they sent "delegates" to Bretton Woods, "observers" to the Savannah organizational meeting in March, 1946, and no one to the Washington meeting in September. It became more and more apparent that the Russians had relatively few problems of their own with which the Fund or Bank could help. Their foreign trade is a relatively small part of their total trade and their currency relatively stable in foreign markets. At the same time, it appeared to be Russian policy to establish two-way agreements with neighboring countries to regulate trade, rather than to agree to more completely free trade as visualized at Bretton

Woods. By late 1946 it appeared that Russia and several small countries did not intend to pay into either the Fund or the Bank the assigned quotas, but it was equally clear that both organizations were prepared to operate without them.⁸ At the same time, the question did arise as to whether the Fund would prove to be much of an improvement over the prewar Tripartite Agreement unless all of the powerful nations should be involved.

Value of Foreign Trade

The problem of whether or not a high level of international trade is essential to full employment and domestic prosperity is one we cannot discuss fully here, but the student should note at least the general nature of the economic problems involved. Although the Bretton Woods proposals sometimes have been advanced as necessary bases, by stimulating international trade, for full employment and production, it is clearly possible for the citizens of each country to be quite busy trading only with themselves and not with citizens of other countries. The value of foreign trade lies essentially in the more economic use of resources, and not in the difference between use and nonuse of resources. Americans, for example, might sell no goods abroad and import none, but we would lower our standard of living by doing without such things as coffee and bananas, and certain raw materials that improve our steel or our tin cans; or we could produce these things or substitutes at high cost instead of things we produce economically. Countries with fewer natural resources would have very low living standards under such conditions. The choice is whether to accept such lower standards and rely on domestic policies to keep people busy, or whether to take advantage of world trade and encourage it by such means as those discussed here.

Problems of the Fund and Bank: Additional Measures

Some of the problems of the establishment and operation of an International Fund and International Bank have necessarily been referred to above. It is impossible to separate the purely financial aspects of such organizations from the problems of international

⁸ There were fifty adhering nations by the end of 1946.

trade theory and related questions, which cannot be entered into fully here. However, certain financial and trade problems merit further consideration. In the first place, it should be noted that the most enthusiastic friends of the proposed organizations did not claim that the plans were panaceas for restricted international trade or depressions. It was widely agreed that each nation must pursue domestic policies designed to maintain full employment and production at home and should adopt other measures to free trade between nations.⁹ The financial arrangements described above merely make trade possible if there are not too many other restrictions. The Fund is designed to insure that exports will give rise to funds that may be spent anywhere in the world, not only in the importing nation. To this end, therefore, nations must permit traders to buy and sell in their best markets, instead of restricting themselves to government trading or bilateral arrangements.

The British Problem

The British problem, of course, was how to handle the large volume of sterling balances owned by other nations. Traders in the sterling area could transfer these balances among themselves in payment for trade between themselves, but the amounts were too large to permit their use for purchasing other currencies or gold. The British authorities would be "swamped" if they should attempt to maintain exchange rates or to supply sufficient gold. Furthermore, this was only one aspect of the British problem of the balance of payments. Whereas before the war Britain received funds from foreign investments and from shipping services, which were used to pay for the excess of commodity imports over exports, during the war a large part of the investments were sold back to foreigners, Britain's share of world shipping facilities declined, and export industries were converted to war production, while imports came largely from lend-lease or from countries willing to postpone payment. Consequently, if Britain is to import food and raw materials on the scale employed before the war, her exports must be increased sufficiently to offset the loss of prewar income.

⁹ At the time of the Bretton Woods meetings there was much apprehension that immediate and serious business depression might follow the end of the war.

The Loan to Britain

Presumably this increase is entirely possible, but not overnight. Consequently, one of the first postwar agreements between the two governments' executives was for a \$3,750,000,000 loan from the United States to Britain for the purpose of enabling her to purchase abroad during the transition period following the war. Naturally, since this loan will increase the payments which Britain will have to make in the future it was negotiated on "easy" terms.

Under the terms of the loan as proposed to Congress by President Truman on January 30, 1946, Britain could draw on the \$3,750,000,000 as needed until 1951 to meet demands for dollars for trade or other payments. Interest on the amount used would be charged at 2%, but payments of interest and principal would not begin until 1951, and could be suspended in years when demands for such payments would be likely to "force default and a crumbling of international economic relations." Repayments would be scheduled over a fifty-year period. The agreement would bind Britain to abandonment of the sterling area dollar pool, controls over foreign exchange and various trade restrictions. It also included a settlement of lend-lease aid to Britain (amounting to about \$25 billion) for \$650,000,000, also to bear interest at 2%. After considerable debate, the loan received Congressional approval.

Other Measures

The international balances themselves may be made more manageable by reducing them through agreement with the owning countries and central banks. To a large extent, the balances were built up as payment for war materials from allied nations, mainly other parts of the Empire, which benefited from British use of those materials in the common war. India, for example, might have been invaded by the Japanese had there been no resistance from British forces. Furthermore, as many of the purchases were at inflated prices, the balances became that much larger. On the other hand, since some of the balances represented all or most of the monetary reserves of the owning central banks at the end of the war, they could not easily have been written off. However, it is probable that some funding arrangements will eventually result, whereby the balances (and

short-term government obligations) will be exchanged for long-term government bonds bearing little or no interest.

Scarce Currencies

The problem of scarce currencies was mentioned above in connection with the point that the United States was expected to be the great exporting nation during the transition period, with resulting shortages of dollar exchange for other nations. A further word is added here to explain how the existence of the Fund was expected to improve the situation. In the first place, of course, each nation can borrow, up to its quota, in order to get additional gold or dollars. If dollars still become scarce, they can be rationed by the Fund. The management of the Fund is vested in the signatory nations in proportion to their quotas, so that in this case the United States would have the largest voice in the disposition of the available dollar balances.

Without the Fund, each importing nation would have to devalue its currency or restrict imports, or both. Its particular position would be improved if it restricted imports in general, not only those from the country with an export balance (the United States in this case). As a result, each nation might be expected to attempt to restrict its imports on the basis of apparent need for different things and on political grounds, with a consequent general strangulation of trade by import quotas, tariffs, and other measures such as had developed in the 1930's. With the Fund, there will supposedly be cooperative sharing of the available scarce currencies and cooperative maintenance of trade in other directions.

The value of the Fund may be assessed by considering what might have happened had it existed in 1930. In the case of Australia, for example, the decline in the world demand for her raw materials led to a very unfavorable balance of trade. Payments for import balances deprived Australia of balances in London and gold reserves. Attempting to protect these reserves, Australia restricted imports and tried to reduce the price level by taxing away purchasing power in order to increase exports that were not wanted even at lower prices. Finally, the gold standard was given up, with a precipitate change in exchange rates. The Australian pound averaged \$4.81 in 1929 and fluctuated between \$3.72 and \$2.68 during the latter part of 1931, but more important were the deflationary factors that had

been put to work within the country. Under the proposed operation of the Fund, such a situation would be handled by extending loans of foreign exchange to Australia while measures were being taken to increase imports from Australia in other countries. If each nation could be prevented from setting up bars to imports, all nations would have less difficulty in exporting, and such international barriers would not arise to contribute to a world-wide depression.

France and Belgium

The problem of establishing suitable gold values of the various currencies, and thus exchange rates between them, is illustrated by the circumstances prevailing in France and Belgium after their liberation. In both of these countries official prices had risen steeply during the occupation, and black market prices had risen even more. The monetary units, therefore, retained only a small part of their prewar values.¹⁰

In both countries, up to the middle of 1944, the proportion of the government's expenditures raised by current revenues was about 30%. This low proportion of expenditures covered by taxation contributed in large measure to the problem of inflation. The heavy burdens of occupation costs and the financing of exports to Germany were in large part responsible for this low proportion. Of the aggregate government expenditures, Germany absorbed in these ways approximately half in France and somewhat more in Belgium.

As a result, in these countries government debt increased by about 250%, between 60% and 70% of the increase having been covered by expansion of bank credit. A very large part of the total assets of the respective central banks and other commercial banks consisted of government obligations. Along with this expansion in banking assets, note circulation increased by 350% to 450%, and demand deposits by about 170%.

The two countries followed divergent policies to meet the similar inflationary situations. In Belgium, a government decree of October, 1944, only a month after the return of the government, provided for an immediate contraction of the currency. The existing notes ceased to be legal tender and new notes were issued for the old on a one-to-

¹⁰ The following paragraphs follow closely *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, October, 1945.

one basis, but only to a maximum of 2,000 francs per person. The balance of the old notes was credited to the holders in blocked accounts, and all existing bank deposits also were blocked, except for a 10% exemption. (In the case of business firms, 1,000 francs per employee were exempt from blocking.) Sixty per cent of the blocked accounts was labeled "definitely unavailable" and 40% "temporarily unavailable." The latter were to be released gradually as imports and economic activity increased. In this way the volume of "free money" in the form of bank notes and deposits, including savings deposits, was reduced from 186 billion francs to 72 billion francs; note circulation alone shrank from 101 billion to 25 billion.

TABLE 74

ASSETS AND LIABILITIES OF THE
BANK OF FRANCE,
1940-1945
(millions of francs)

	Dec. 26, 1940	May 31, 1945
Assets:		
Gold	84,616	75,151
Foreign exchange	42	45
Domestic bills:		
Open market	43,194	48,141
Other	4,307	10,162
Advances to government:		
For occupation costs	72,317	426,000
Other	63,900	19,750
Other assets	23,179	35,403
	<u>291,555</u>	<u>614,652</u>
Liabilities:		
Note circulation	218,383	548,945
Deposits:		
Government	984	774
Reichskreditkassen	41,400	.....
Other	27,202	57,231
Other liabilities	3,586	7,702
	<u>291,555</u>	<u>614,652</u>

Source: *Federal Reserve Bulletin*, June, 1946, p. 696.

France adopted a more gradual shrinkage and there was no blocking of accounts. By sales of government bonds to "soak up" savings the note circulation was contracted from its peak of 656 billion francs in October, 1944, to 562 billion in January, 1945, and further to 400 billion in July. This latter reduction represented currency exchanged for demand deposits (not an overall reduction in money supply), currency obtained by collaborationists or tax evaders and the like, and thus not turned in for new notes, plus whatever currency had been lost or destroyed.

In spite of these measures, the unsettled budget conditions and the needs of the Allied armed forces required a continuation of government deficits. Thus, the volume of money in circulation persistently tended to increase, as long as money was being created by the central banks for their governments.

During the war official prices increased 183% in France and about 100% in Belgium. The contraction of monetary circulation did not result in lowered prices, but removed some of the buying pressure existing at legal prices. Official prices continued to move up.

Partly to continue the fiscal program, but also for political reasons, both countries devised capital levies and taxes on wartime profits. For example, the National Solidarity Tax in France consisted of a capital levy payable in four installments during 1946-1949 at rates ranging from 3% on capital holdings of less than 500,000 francs to 20% on holdings over 300 million francs (after certain exemptions), and an "enrichment levy" on the difference between the wealth owned by the taxpayer on January 1, 1940, and that owned on June 4, 1945. The rates for the latter levy ranged from 5% on 150,000 francs above exemptions to 100% on amounts above 5 million francs.¹¹

These deflationary measures adopted in France and Belgium were not sufficient to restore their price levels to parity with world price levels at existing exchange rates. The Belgian franc was restored to trading in September, 1945, at a rate of 2.29 cents, as compared to the prewar rate of 3.37. As mentioned in the preceding chapter, the French franc was pegged at approximately 2 cents during the war, and was traded in at that figure for several months after the war. This rate overvalued the franc, however, and in December, 1945, the gold value of the franc was reduced to create an exchange

¹¹ End of material from *Monthly Review*.

rate on New York of 0.84 cents, somewhat less than half its previous value.

The Hungarian Postwar Inflation

During and after World War II several Eastern European countries experienced monetary inflations similar to those of Germany and other countries after World War I. In Yugoslavia and Rumania the note circulation was increased several thousand times over the 1939 level. In Hungary the inflation exceeded even that of Germany in 1923. By late 1944 notes in circulation were about ten times as great as in the early war years, but in 1945 and 1946 tremendous government issues

. . . carried the pengő to annihilation. The initial impetus to the wild inflation came during the siege of Budapest which began in December, 1944, when food became so scarce in the city that any prices were paid, stocks having been requisitioned by the contending armies. This was followed by issues of Red Army pengős and roubles, while notes poured in to the new reduced Hungary from the ceded territories. After that, things went from bad to worse, large amounts being issued to cover the reconstruction of industry, government expenditure and the costs of occupation, with no possibility of enforcing any price control. Higher and higher denominations of notes were issued, the public be-

TABLE 75

HUNGARIAN NOTE CIRCULATION, 1939-1946

End of:	Millions of Pengő
1939	975
1940	1,400
1941	2,000
1942	3,000
1943	4,400
1944	11,000
1945	765,400
1946-Jan.	1,646,000
Feb.	5,238,000
March	34,000,000
April	434,000,000
May	65,589,000,000
June	6,277,000,000,000,000
July 15	76,047,000,000,000,000,000

Source: *Sixteenth Annual Report*, Bank for International Settlements, p. 39.

of 1946. The necessity of obtaining more funds led the government to print notes in an ever-increasing flood, until, as in the German inflation of 1923, the citizens feared to accept money in anticipation of its loss of value. Prices rose so fast that wages had to be revised weekly and later from day to day. It became necessary for employers to pay wages in food, or to base the monetary wage upon the number of calories it would purchase. Bank deposits were revalued upward weekly in order to offset their depreciation. As in other famous inflations, professional groups lived only by selling and bartering their valuables and white-collar groups suffered tragic results. In July a *New York Times* correspondent wrote that,

. . . by sheer velocity of price increases (the inflation) has reduced every salary and wage earner to complete destitution, except for those who have savings from bank deposits miraculously preserved by the tax pengoe accounting or who have salable goods such as clothing. The working force in Budapest's offices, factories and stores literally is working for nothing.¹⁴

He investigated what could be purchased with a week's wages. A textile worker was able to buy two pounds of meal; a metal worker, not all of his bread ration; a house painter, five pounds of lard; and a laborer, $\frac{1}{2}$ liter of oil, four pounds of meal, one piece of soap and two pounds of beans.

One device for withdrawing the excessive pengös from circulation and establishing the tax pengö was the requirement that all pengö notes above 500 pengös had to be presented for stamping. A charge of three-fourths of the face value of the notes was made; thus a 1,000 pengö note would, in effect, become a 250 pengö note.

Also, as had occurred in Germany, the old monetary unit was discarded and a new one, called the florint, was established. The government strictly limited the volume of florints in a determined effort to re-establish a price system.

A visit to Budapest today, compared with a visit two months ago, is like going through a laboratory demonstration of principles of economics as taught in American colleges. There is dramatic evidence to support the simple proposition that money is a commodity with a certain function and that, like other commodities, it is valued according to its relative rarity.¹⁵

¹⁴ *New York Times*, April 9, 1946, p. 2.

¹⁵ *New York Times*, September 3, 1946, p. 7.

Official prices were established at approximately the level prevailing before the inflation. The public was sufficiently convinced that the "miracle" would work that people were willing to sell goods for the new florints. High public utility and similar charges served to siphon off purchasing power from other commodities. Agricultural products again flowed into the cities, as farmers regained confidence in the currency. These developments naturally were reflected in a severe decline in the velocity of circulation. The government was so determined to limit the supply of florints that, during the first month of their introduction at least, business firms were unable to acquire enough of them to pay wages in full.

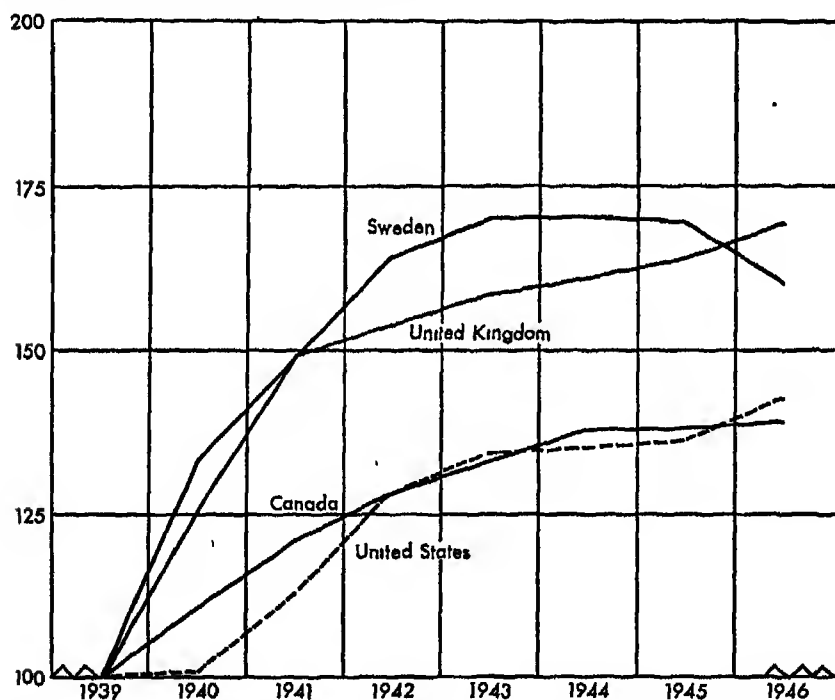


FIG. 44.—Index of Wholesale Price Levels in Sweden, United Kingdom, Canada, and the United States, 1939-1946. (1939 = 100; figures for 1946 are April figures.)

Effect of Rise in American Prices

The other side of the problem of postwar exchange rates as it related to France and Belgium was the problem confronting other countries whose currencies had fared as well or better than the

United States dollar in domestic purchasing power. The rise in the American price level, which was fairly successfully controlled during the war, was accelerated at the end of hostilities by the relaxation of controls on prices of numerous "reconversion items" and on wage rates. The rise was especially pronounced during the summer of 1946 when the Office of Price Administration was temporarily suspended and then restored with greatly reduced power. As the dollar bought less and less at rising commodity prices, its relative superiority to other currencies in countries where prices were not rising as rapidly tended to disappear.

The Canadian Revaluation

In direct contrast to the complete depreciation of the monetary unit in Hungary, is the action of Sweden and Canada in the revaluation of their currencies upward. Canada was in the fortunate position of having exported heavily during the war and accumulated large foreign balances. Canadian balances in the United States were built up to over \$1,500,000,000. When war broke out in 1939 the Canadian dollar had fallen on the exchanges, partly through speculation, to an average of 85 American cents in 1940. The traditional parity between the Canadian and American dollars was thus broken; the Canadian dollar was pegged at approximately 91 cents throughout the rest of the war. The Canadians found, of course, that this exchange rate made imports cost about 10% more than previously, assuming that the same prices existed in other countries. As a result, Canadian prices of commodities containing foreign raw materials tended to rise.

On the other hand, the Canadians were relatively successful in imposing and maintaining price ceilings during the war. Official indexes of retail prices and the cost of living credit Canada with a 21% increase and the United States with a 33% increase between 1939 and 1946. The Canadians feared that a restoration of free markets while the 90-cent dollar prevailed would tend to bring into the Canadian price level not only the higher prices of imports from the United States, but this 10% differential as well. The probable balance of trade was such that the Canadians did not fear that purchases of foreign currencies would further depreciate the Canadian dollar; in fact, the Canadian dollar appeared to be one of the scarce currencies

of the postwar world, because of the world-wide demand for Canadian exports. Consequently, in July, 1946, the Canadian government announced the establishment of a new rate, or the re-establishment of the old rate, with the United States. The Canadian Minister of Finance announced,

We were faced with the alternative of either changing the exchange rate, or of setting in motion, as the process of decontrol continued, an increase in our own price and cost structure, more or less to the American level plus 10%. What this last would mean in terms of high cost of living, social unrest and wage conflicts, can readily be imagined.¹⁶

Sweden similarly increased the value of the krona in relation to the dollar and pound during 1946. These measures were, of course, the reverse of those taken during the depression to raise prices. The increase in the value of the domestic currency was brought about in order that there should be resistance to price rises which would tend to follow from the purchase of higher-priced goods abroad. If the foreign currency (such as the dollar) is made cheaper, the price rise is offset by the lower exchange rate. (A contributory factor in the case of Sweden was a sharp decrease in shipping and insurance rates on imported goods.)

Several other countries were in a similar position in that, at existing exchange rates, the dollar would buy more in those countries than in the United States. Such calculations cannot be made closely because the index numbers are seldom strictly comparable, and, secondly, because such a comparison assumes that price levels actually were equated by exchange rates on some base date. However, in the summer of 1946, it appeared that a dollar when spent in Australia, Canada, Norway, Venezuela, or South Africa would buy at least as much as or more than it would in the United States. At official prices, and at the official exchange rate of 10 cents, the dollar could buy far more in Germany, also, but trading, of course, was virtually banned.¹⁷

¹⁶ Quoted in *Federal Reserve Bulletin*, August, 1946. In free trading, however, the Canadian dollar again fell to 90¢ U.S. by the summer of 1947.

¹⁷ During the beginnings of the quadripartite control of Germany inflation was pretty well under control. Rigid price control during the war and surprisingly good tax collection after the war contributed to relatively stable prices. Occupation currency issued by the four occupying powers added to the money supply, however, particularly in the Russian zone. No statistics became available for that zone, but it is significant that the Russians issued 1,000-mark notes while the other three powers did not.

On the other hand, countries such as France and Belgium had experienced too much price inflation to maintain their prewar exchange rates. The examples cited, wherein France and Belgium represented one situation and Canada and Sweden the other, illustrate the problem of arriving at satisfactory exchange rates on which to commence the operations of the International Monetary Fund. The example of Hungary is cited to illustrate the similarity to the conditions following World War I.

Addendum

Since this chapter was set in type there have been several developments which it is possible to note at this point. The Canadian situation deteriorated from that described on pages 517-518, because Canada lost dollars when buying American goods and failed to regain funds simultaneously, since exports to Europe were largely on credit. The Canadian dollar again went to a discount. The French again found it necessary to devalue drastically in conformity with their price level. Their devaluation was coupled with restrictions on transactions in most currencies, despite strong opposition expressed by the International Monetary Fund.

During its first nine months of operation the Fund exchanged over \$400,000,000 for various other currencies: Chilean, Danish, Mexican, Dutch and Turkish, but principally British and French.

The first loan made by the International Bank was to France, in May, 1947, in the amount of \$250,000,000, principally for imports considered essential to French recovery. For similar purposes, a loan of approximately \$200,000,000 was made to The Netherlands. During 1947 the Bank also considered applications for loans to Chile, Czechoslovakia, Denmark, Iran, Luxembourg, Mexico, and Poland; some of these were approved early in 1948. Funds were requested for hydro-electric, forestry, harbor, transport, agriculture, pipeline, coal mining, and iron and steel projects. In July, 1947, the Bank made its first offering of bonds, priced at par, which was heavily over-subscribed by American investors. There were \$100,000,000 of ten-year 2¾% bonds and \$125,000,000 twenty-five year 3% bonds.

Besides the loans just mentioned, others were made by the Export-Import Bank. Dwarfing them all was the so-called Marshall Plan, designed to make immediately available to sixteen European countries over five billion dollars for economic rehabilitation.

The *Annual Reports* of the Fund and Bank are excellent sources of information on recent transactions.

XXX

ELEMENTARY CONCEPTS: MONEY, SAVING, AND INCOME

IN ORDER to understand the relationships between such associated quantities as the volume of money, national income, production, and prices, we will first discuss briefly what is meant by these and some related concepts.

National Income

The notion of a "national" income is a fairly simple concept, although the problems of measuring it may become exceedingly complex. Fortunately, these problems belong in the field of the science of statistics and need concern us only to the extent that they contribute to a grasp of the idea of the national income itself.

Sum of Individual Incomes

The simplest conception of a national income is that of the sum of all individual incomes within the nation. A census might be taken whereby the income of each individual is added to all the other incomes. Certain questions would arise in connection with such a census that would illustrate the nature of the problem. For example, the census takers would have to be told whether to include as income

allowances given by parents to their children. Should such gifts be counted as income of the children after being counted in the parents' income? Again, if a professional man receives fees of \$10,000, but pays his secretary \$2,000, is their total income \$12,000? It is clear that this would be double counting, since the \$2,000 is a cost to the professional man, and should not be counted in his net income. On the other hand, his daughter might serve as his secretary without compensation; thus their total income would be the same as in the preceding case. Again, the government might collect taxes and pay pensions to war veterans; should these be considered income? The pensions are clearly income to the recipients, but they do not add to the total income of the community because they result in lowering the incomes of others. These cases illustrate (1) that what we are seeking are *net* incomes of individuals, and (2) that we do not want to include any sums that are merely transfers of income from one set of individuals to another, which do not augment the total.

Further complications arise in the case of durable goods. If A rents his house, the rent (minus expenses) is income for the landlord. If B owns and lives in a similar house, there is no similar payment to represent income, as B is his own landlord. Some statisticians prefer to include the rental values in the total national income in these instances. Otherwise, a rising proportion of home owners would reduce the total national income, although it could not be claimed that the nation was actually poorer. However, the inclusion of such items leads to many similar problems, such as the treatment of the values received from household furniture, automobiles, and other durable goods. Other incomes of a nonmonetary nature include those derived from home-grown vegetables, from services done at home by members of a family rather than by hired help, free office space for university professors, and many others.

Income as Production

Notice of these difficulties of measuring incomes on a monetary basis leads to the possibility of another meaning of national income, namely, the real income of the community in terms of goods and services made available during a period. Clearly, a primitive, non-monetary economy would have to measure its income in this fashion, by a totaling up of the things that were produced for consumption or

as capital. Here, again, it would be difficult to avoid double counting. We could not add together the values of the wheat crop, of the flour that was produced from the wheat, and of the bread produced from the flour. We could include only the bread, or start with the wheat and add the "value added by manufacture" at each successive stage. Particular attention would have to be given to the stock of capital goods at the beginning and end of the period. Newly produced machines would clearly be additions to income and worn-out ones would be deductions, and the wear and tear—depreciation—on existing machines also would have to be deducted.

Income, Costs, and Profits

Each person's net income is his gross income minus the costs of getting it. These costs, with the exception of depreciation allowances, are payments to others (and the depreciation allowances are presumably paid out later, when they accumulate).¹ Costs are thus gross incomes for others, who in turn have costs and net incomes. The sale of a final consumers' good thus represents a part of the national income in two ways. The value of the good itself is part of the national income. Owing to the distribution of the receipts of the sale, the

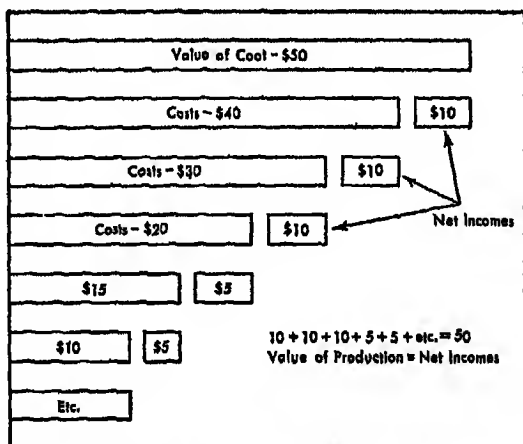


FIG. 45.—Costs Plus Profits Equal Incomes: Hypothetical Distribution of Costs and Profits Involved in Production of a Coat.

¹ Depreciation allowances present a complication in measuring the national income, but the complexities need not be entered into here. It should be noted that a going concern may pay out for replacements a greater or smaller amount than that charged against income during the period for accounting purposes.

money incomes of the public will be an equal amount. That is, when a storekeeper sells a coat for \$50, everything above his costs is his net income. Since the costs are incomes for others, money incomes of \$50 must accrue from the production and sale of the coat. Thus we may say that the national income is the sum of all costs and profits during a period.

Saving

Although the concept of the national income is described above only in an elementary fashion, we may turn for a moment to a consideration of the disposal of that income. As far as the individual is concerned, all of the possible things he can do with his money income can be summarized in two obvious possibilities: he can spend it or not spend it. These possibilities are refined somewhat if we say that he can consume, or spend on consumption items, or he can refrain from doing so. It is helpful to think of saving as simply the failure or refusal to consume.

Saving and the Volume of Money

The reason for this becomes apparent if we consider the relationship of savings and the volume of money. There is apparently a widespread belief that saving increases the volume of money. This is natural, since each individual can increase his supply of money by saving. The idea that saving is synonymous with accumulation is probably furthered by the way in which we learn to save as children; we actually put coins in a bank. We therefore tend to think that saving increases the volume of bank deposits. But in a well-developed monetary system, saving ordinarily is not a positive act, like dropping pennies through a slot, but simply is a failure on the part of individuals to consume their entire incomes by the purchase of consumption goods. The existing volume of money is not changed, but some of it lies idle.

The effect of saving on the volume of money can best be illustrated by assuming an increase in saving by everybody. To revert to the example of the desert island mentioned in the first chapters of this book, let us assume that there are ten inhabitants and that each has a sum of money, currency and bank deposit, totaling \$100, so that there is a total volume of money in circulation of \$1,000. Suppose

further that the average income is \$100 a month, and that each person decides to save \$25 a month. During the month, then, every inhabitant will spend an average of \$75, and, since he will spend it by buying from the others, each must therefore receive an average of \$75. Consequently, on the average every person will end the month with the same amount of money with which he started, \$100, consisting of the \$75 he took in plus the \$25 he kept. This illustration emphasizes the fact that saving by itself has no influence on the volume of money, but rather on the velocity of its circulation. Increased saving, which is merely reduced spending, is a reduction in the velocity of circulation.

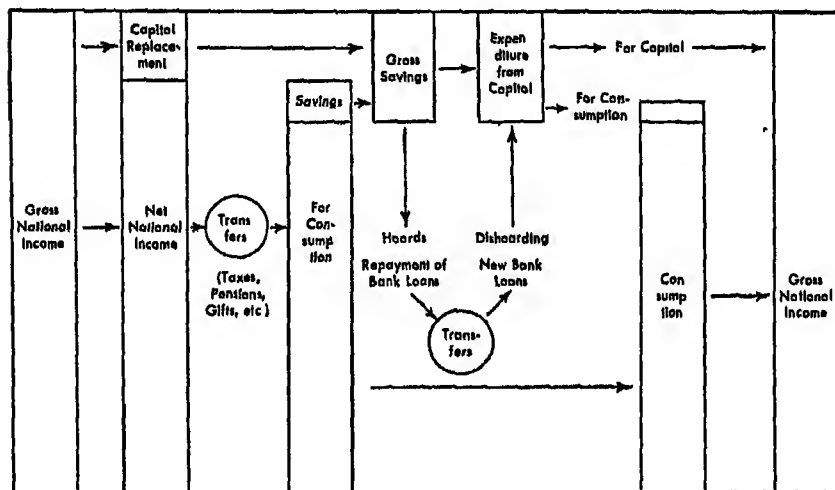


FIG. 46.—Flow of National Income.

What has just been said as to the relationship between saving and demand deposits does not apply as well to savings deposits. Savings deposits are bank debts, like demand deposits, but differ in the important respect that they are not transferred from person to person as money. Saving may, and often does, increase the volume of time or savings deposits. In the mind of the saver, there may be very little difference between the deposit of an income check to his demand deposit and the deposit of the same check to his savings account. In either instance he will have a larger "bank" deposit. However, even if the saver increases the volume of savings deposits, the volume of money will not be increased any more than if some other person's de-

mand deposit were transferred to him. The total volume of money, in fact, will be reduced, at least temporarily, because the reduction of the check-drawer's balance will not be offset by a corresponding increase in another demand deposit.

Assuming, for simplicity, that drawer and drawee are customers of the same bank, let A draw a check for \$100 in favor of B and let B deposit it to his savings account. There is \$100 less money as a result of the shift from demand to time account. This is the result of the saving taken by itself, but other factors may be called into play. Assuming a 20% reserve ratio for demand deposits and a 5% ratio for time deposits, the bank acquires \$15 of excess reserves as a result of this shift. These additional reserves may lead to more loans and an expansion of demand deposits throughout the system of \$75, which still, of course, is less than the original \$100.

Investment

Although saved money is not spent for consumption, it may nevertheless be spent. The only possibility other than consumption is, of course, investment. Income that is not spent at all is *hoarded*, but if it is spent in acquiring income-producing assets it is invested. Thus, the increase in saving on the imaginary island may not result in reduced spending or slower velocity of circulation, but rather in a change in the character of commodities purchased. Machines, buildings, and similar equipment may be purchased instead of food or clothing.

Relationships

It thus follows from these definitions that the amount of income saved and the amount of income invested may be different in monetary terms. So far, we have noted only that saving may exceed investment by the amount of hoarding. Let us note what would happen to incomes and prices if this should happen. The effect on incomes is already clear from the example cited above. The hoarding of \$250 resulted in a drop in income from \$1,000 to \$750 per month, as each person took in during the month \$75 instead of \$100. With the complication of adjusting for gross and net income, the same thing happens in a more complicated society. Spending and sales are synonymous, and when sales decline, the incomes of the sellers are reduced

accordingly. Further, a corresponding fall in prices would be expected. As each of the ten inhabitants of the island finds the demand for his product reduced, he must sell for lower prices to clear his shelves. In other words, the output produced during the period of spending must sell for \$750 rather than \$1,000, or part of it will not be sold. The extent to which prices decline might differ from product to product, but clearly there must be a fall in average prices as a result of the hoarding.

On the other hand, if the \$250 of savings is spent during the month for investment goods, sellers still receive average incomes of \$100, and the total output is sold for \$1,000. On the average, the price level should be relatively unchanged. Consumers' goods are likely to fall in price, since only \$750 is offered for them and production has been at the rate of \$1,000 per month, but the demand for capital goods is greater and whatever output of such goods is forthcoming during the month can be sold for \$250. In fact, if the production of investment goods takes the place of the production of a similar volume of consumers' goods, there will be no surplus of the latter to depress their prices.

The Influence of Bank Credit

So far the discussion has concerned changes in spending that are reflected in changes in the velocity of circulation, if at all, rather than in the volume of money. The presence or absence of hoarding, in other words, influences the price level and incomes in this way. Another variable comes into the problem in the form of changes in the volume of demand deposits resulting from changes in the volume of loans or investments of the banks.

Results of Bank Loans

Suppose now that in our island society, while the national income is \$1,000, someone obtains a bank loan of \$100 for the purpose of constructing some capital goods. No one's income is any less, but in the immediate future there will be \$1,100 to be spent. If, as before, the society has been spending \$750 for consumer goods and \$250 for investment goods, the demand for investment goods will now amount to \$350. The results of this increased spending will depend somewhat upon the conditions that prevail at the time. If, for instance, all

of the inhabitants are employed, the spending on producers' goods will tend to raise their prices and make their production more profitable. Their production will tend to expand, but it can do so only at the expense of the production of consumers' goods, since there are no idle resources. Producers of capital goods will bid somewhat higher prices for materials and will raise wages to get additional labor, with the result that consumer-goods producers will be unable to produce as much in view of their higher costs. As the \$1,100 is spent and passed to new hands it becomes gross incomes, and as each new recipient pays out part of it as his costs, leaving him a net income, the costs become gross incomes for others, and so on. In effect, what happens is that money incomes are increased, but on our assumption of full employment, total production is not increased. The types of goods produced change, however, in that there are now more capital goods coming to the market and fewer consumers' goods. The consumers' goods tend to rise in price, as the \$750 being spent on them buys up the smaller output. The fraction of the output that previously sold for \$250 now sells for \$350, but it is a larger fraction. Putting them together, total output sells for \$1,100, and if the total is no larger than before, average prices must be higher.

In fact, although all of the inhabitants are employed, they might work longer hours and produce more, a circumstance which would alter the arithmetic of the problem. Production of both consumers' goods and producers' goods might rise, so that the \$1,100 would command a larger volume of goods and average prices would rise less than in the first case.

Finally, we may assume that the island society has been suffering from unemployment and that the extra expenditure of \$100 results in some re-employment. In this case, the production of consumers' goods need not decline to make possible the expansion of the production of capital goods, and total production will rise along with the increased spending. In other words, the real income of the community increases while its money income rises to \$1,100.

Problems Ahead

The preceding pages have covered in a simplified fashion, and with many unstated assumptions, the type of analysis we are now about to examine. The central problem of monetary theory is the

analysis of the value of money, in the same way that the central problem of general economic theory is the analysis of the relative values of various commodities, including services. We will find that the same kind of approach to the problem is required, namely, a marshaling of the factors that influence the supply of and demand for money. Over and above the mere stating of these factors, however, it is desirable to examine the ways in which changes in the value of money are associated with other changes in the economic system—for instance, in the volume of production and trade, employment, wages, and other factors. As we reach a satisfactory explanation of the changes in price levels (the value of money) we also will reach conclusions concerning the causes of changes in business activity and the national income.

National Income in the United States

Illustration of the concepts described in this chapter is found in the Department of Commerce estimates for the national income and its constituent items. We will use figures for the years 1937–1944 because of the large changes in this period. We may start with the figures for “gross national product.” This is the total value of all production without adjustment for certain costs, such as depreciation and depletion. The constituents of this total for three separate years are shown in Table 76, along with the adjustments necessary in measuring the total.

It will be observed that the increase in gross national product which occurred during the war years took place largely in the production of war items, on which the Federal government spent \$86.3 billion in 1944. This total includes not only munitions but all items purchased by the government for war purposes. All together, goods and services produced for the Federal government totaled practically \$92 billion in 1944, while total national product was \$198.8 billion. This is the basis for the statement often made that about half our resources were devoted to the war effort.

Private gross capital formation declined from \$11.6 billion in 1937 to \$1.8 billion in 1944, also largely because of war conditions. Residential construction was severely curtailed, as was construction of virtually all buildings not needed for war production. The production of machinery and similar durable equipment increased

sharply in the early years of the war in the days of "tooling up" for war production, but fell off rapidly towards the end of the war as materials were channeled elsewhere. Changes in inventories affected the amount of capital in existence; for example, inventories declined \$1.7 billion in 1944. Before the war more of the national production was exported than was offset by imports, so the net exports must be included. Deduction of these items leaves the remaining production of consumer goods and services, which stood at \$62.5 billion in 1937 and \$97.6 billion in 1944. It may be noticed that in spite of wartime scarcities the expenditure on durable goods by consumers was virtually as large in 1944 as in 1937, although not as large as in 1941 when the production of refrigerators, radios, washing machines, automobiles, and the like was very large.

TABLE 76

GROSS NATIONAL PRODUCT,
1937, 1941, 1944
(billions of dollars)

	1937	1941	1944
Gross national product	87.7	120.5	198.8
Gov't expenditures for goods and services	13.6	26.5	99.4
Federal government	6.1	18.6	91.9
War .....	...	13.3	86.3
Nonwar .....	...	5.3	5.6
State and local governments	7.5	7.9	7.4
Private gross capital formation	11.6	19.4	1.8
Construction	3.7	5.2	1.6
Residential .....	...	2.8	0.5
Other .....	...	2.5	1.1
Producers' durable goods	6.3	8.9	4.0
Net change, business inventories	1.1	3.5	— 1.7
Net exports, goods & services .....	.1	1.5	— 2.1
Net exports and monetary use of gold and silver .....	.4	.2	...
Consumer goods and services	62.5	74.6	97.6
Durable goods	7.6	9.1	6.7
Nondurable goods	54.9	40.1	60.0
Services		25.4	30.9

Next we may observe the adjustments that must be made to reduce the gross national product to the national income and to income pay-

ments to individuals. "The national income is a measure of the net value of the Nation's economic output and at the same time a measure of the command over this output."² The deductions from gross national product are shown in Table 77. The various liabilities incurred during the year and reductions in values of capital assets, listed in the table, are clearly deductible before we have a net figure for the value of annual production. On the other hand, the income

TABLE 77

NATIONAL INCOME AND
INCOME PAYMENTS,
1937, 1941, 1944
(billions of dollars)

	1937	1941	1944
Gross national product	87.7	120.5	198.8
Deductions:			
Business tax and nontax liabilities	9.0	18.5	29.3
Depreciation and depletion	6.1	7.0	8.4
Other business reserves	1.0	.8	.7
Capital outlay charged to current expense ..	.8	1.3	.9
Adjustments:			
For inventory revaluation	— .7	— 3.2	— .1
For discrepancies .....	... —	.8 —	1.1 —
National income	71.5	96.9	160.7
Additions:			
Transfer payments	1.7	2.5	5.3
Deductions:			
Corporate savings	— .8	4.0	5.4
Contributions to social insurance funds	1.7	2.6	3.9
Income payments to individuals	72.3	92.8	156.7

payments received by individuals may be more or less than the figure for national income produced. Transfer payments, discussed above, are income payments to the individuals who received them but are not additions to the total income of the society. In some years corporations may pay out in dividends more than current earnings. In reverse, corporate income that is not paid out was produced but does not reach the hands of individuals. Similarly, the taxes paid to Social Security funds and the like are earned but are not at the disposal of

² Dept. of Commerce, *Monthly Income Payments in the U.S. 1929-1940*, p. 3.

the earners. Allowance for these additions and deductions gives us the figure for income payments to individuals.

TABLE 78
CONSUMER EXPENDITURES AND SAVINGS,
1937, 1941, 1944
(billions of dollars)

	1937	1941	1944
Income payments to individuals	72.3	92.8	156.7
Personal taxes and nontax payments	3.1	4.0	19.3
Federal	1.4	2.0	17.2
State and local	1.7	2.0	2.1
Disposable income of individuals	69.2	88.8	137.4
Consumer expenditures	62.5	74.6	97.6
Net savings of individuals	6.7	14.2	39.8

Next we may consider how the income payments to individuals were disposed of. First call on incomes comes from taxes; the remainder is considered "disposable" income. Disposable income of individuals rose from \$69.2 billion in 1937 to \$137.4 billion in 1944. The great increase in savings is apparent; while disposable income approximately doubled between 1937 and 1944, consumer expenditures increased about a half and saving about sixfold.

TABLE 79
CONSTITUENTS OF THE NATIONAL INCOME,
1937, 1941, 1944
(billions of dollars)

	1937	1941	1944
National income	71.5	96.9 ¹	160.7 ¹
Total compensation of employees	48.3	64.5	116.0
Salaries and wages	45.0	60.8	112.8
Supplements	3.3	3.7	3.2
Net income of proprietors	11.9	15.8	24.1
Agricultural	5.1	6.3	11.8
Nonagricultural	6.8	9.6	12.3
Interest and net rents	7.4	8.0	10.6
Net corporate profit	3.9	8.5	9.9
Dividends	4.7	4.5	4.5
Savings	— .8	4.0	5.5

¹ Totals fail to check because of dropped digits.

Finally, we may examine the monetary sources of the national income, that is, the parts received as wages, salaries, profits, and other shares. Broad differences in the increases going to different economic groups is readily apparent. Both salaries and wages and corporate profits rose about 150% while the incomes of proprietors doubled and interest and rents increased about 43%. These made up the overall increase in the national income of approximately 124%. These changes are summarized in Table 79.

XXXI

THE QUANTITY OF MONEY AND THE PRICE LEVEL

THE VALUE of money, like the value of anything else, is simply what the money will exchange for, or buy. We may be concerned with the value of the total existing stock of money, or more significantly, with the value of each unit of money. The latter is the more appropriate meaning in most instances. When we discuss the value of wheat, for example, we are thinking of its value per bushel; when we discuss the value of money we are thinking of the value of a dollar. At the same time, it is true that farmers or others may be particularly interested in the value of the whole wheat crop, and it is sometimes appropriate to study the value of the whole existing stock of money. In any event, the value of the total stock is merely the value of each unit multiplied by the number of units.

The Price Level and the Value of Money

The value of money is expressed in terms of the price level. As the value of wheat is expressed in the number of dollars that exchange for a bushel, and the values of automobiles, shoes, and everything else are expressed in some similar fashion, so the value of the dollar is expressed in the amount of goods in general that it will exchange

for. When prices are high the value of a dollar is low, and when prices are lower the value of a dollar is greater.

"The" price level is a misleadingly simple term, because there are many price levels. There are, for example, the wholesale price level, the retail price level, the price level of consumption goods, of capital goods, of perishable goods and of durable goods, and of securities. In fact, we can measure the level of prices of any category of goods.

To measure the value of money in general, however, we must have in mind an average of the prices of all the things that money exchanges for. Variations in the prices of specific commodities are significant only as they are not offset by changes in other prices. That is, if the prices of half the goods and services should rise while the prices of the other half should fall equally, a dollar would still be worth as much on the average as it was before.

Sometimes we are interested in the value of money for specific purposes. For instance, wages are often connected in public debate or in industrial agreements with the cost of living. Here we would be interested in the power of a dollar to command goods and services that enter into a wage earner's cost of living, and we would construct a measure that includes only such items as the principal constituents of food, clothing and shelter, and other cost-of-living items, all to the extent that they are normally purchased by wage earners.

Index Numbers

We usually do not think of the price level as an absolute figure but as a figure or level relative to some prior level. Prices are "high" or "low" relative to some previous period. Changes in the price level—thus changes in the value of money—may be measured from time to time by the use of index numbers. We will not enter here into the complexities of the actual construction of index numbers, but will explain what the finished product is. Most index numbers are averages of percentage changes. The percentages to be averaged, called "relatives," are usually weighted according to the importance of the respective prices making up the index. A simple example will suffice to illustrate the process of weighting the relatives and averaging the results of changes. The resulting index number shows the average level of prices in relation to the average level existing in some base period when the index number is assumed to have been 100.

	Price in 1940	Price in 1941	Relative	Weight	Weight Times Relative
Coal, per ton	\$10.00	\$11.00	110(%)	2	220
Steel, " ton	35.00	40.25	115	3	345
Wheat, " bushel	1.00	1.50	150	7	1,050
Cotton, " pound	.10	.09	90	10	900
Lumber, " foot	.10	.08	80	5	400
				<u>27</u>	<u>2,915</u>

$$\frac{2915}{27} = 108.$$

The hypothetical figures used in this illustration show that the price of coal increased from \$10.00 per ton to \$11.00 per ton, or an increase of 10%. The 1941 price was therefore 110 relative to the 1940 price. (The 1940 price was of course 100% of itself, and the 1941 price was 110% of the 1940 price.) Similarly, the price of cotton fell to 90% of its 1940 price. We thus have a series of relatives showing the relation of 1941 commodity prices to the 1940 prices of the same commodities. We could average these relatives and have an unweighted index number, but it would not be a useful measure because the changes in different commodities may be of different degrees of importance. If we may assume for the moment that these five commodities are all the commodities there are, the value of the dollar may be affected more by the 10% decline in cotton prices than by the 10% increase in coal prices, if more dollars are spent for cotton than for coal. Let us further assume, then, that the expenditures during 1940 for the five commodities were in the ratios expressed above as weights. Five times as much was spent on cotton, for example, as was spent on coal, and twice as much as was spent on lumber, and so on. By the use of these weights we can obtain an average which will reflect the relative importance of the constituent changes. In this manner we obtain an index number of 108; the price level is found to be 8% higher in 1941 than in 1940. (The unweighted index is 109.)

The value of money therefore declined to 92.6% of its 1940 value. (100:108 = x:100, or 92.6.) While the price level rose 8% the value of the dollar declined only 7.4%. The reason why the percentage changes are not the same is that the price level increase is measured

upward from 100, while the value of money is measured downward from a hundred. If the price level should double, the dollar would be worth half as much: the price level would be 200 while the value of money would be 50. If the price level should go to 300, the value of money would be cut to one-third, or 33.3. In other words, the higher the price level, the more closely the value of the dollar approaches zero. For the same reason, when the price level falls below 100 the value of money rises proportionately above 100. When the price level is at 90, the value of money is at 111.1.

The most widely used index of the wholesale price level in the United States is the one prepared by the Bureau of Labor Statistics. The Bureau uses the prices of 784 commodities and obtains the index in the following manner:

1. The base-period price of each item is multiplied by the quantity of that commodity marketed during a representative period.
2. The average price for the current period is also multiplied by this same quantity.
3. The total value of all these quantities at the current prices is compared to the total value of these same quantities at the base-year prices. This yields a percentage relationship which is the index number. This is known as the aggregate type of index number, and is expressed algebraically as

$$\frac{\sum P_1 Q_0}{\sum P_0 Q_0}$$

where P_0 is the price of each commodity in the base year, P_1 is the price of each commodity in the current year, and Q_0 is the representative quantity of each commodity. (\sum means "sum of.") Since the quantity of commodities is held the same, any change in the value of these commodities must stem from changes in price.

Importance of the Value of Money: Real Income

The value of money is important primarily because most people obtain their incomes in the form of money, and hence changes in the price level affect the real incomes that people can buy with their money incomes. Since a person's income seldom changes in exact proportion to changes in the price level, some people are benefited and some harmed by a given change in the price level. Certain incomes, such as pensions, salaries, annuities, and interest are relatively rigid,

so that the recipients can consume less in periods of high prices and more in periods of low prices. Other incomes, notably profits, fluctuate rapidly for the simple reason that incomes paid out as costs are less fluid. A business firm pays the same bond interest regardless of changes in the price level, and does not quickly adjust its wage rates to price changes. Hence, as the price level rises, interest and wages lag and profits rise, and vice versa. The distribution of real income thus changes with price-level changes.

Debts

In addition, the level of prices influences the relative welfare of debtors and creditors. If a farmer buys a \$10,000 farm with \$3,000 which he has saved and \$7,000 which he has borrowed on the security of a mortgage, he may anticipate that the sale of 7,000 bushels of corn at \$1.00 a bushel will provide him with the funds to repay his debt. If the price level declines, and is low when the debt falls due, he may need 14,000 bushels at 50 cents for the same purpose; in other words, his debt has become twice as heavy. The creditor, on the other hand, can buy more with the \$7,000 than he could have bought when he lent the money. In the same manner, the interest burden is heavier when prices are low.

Production

Beyond these effects, changes in the price level contribute to changes in business activity. When prices are rising businessmen anticipate profits and quite likely expand their scale of production, constructing additions and hiring more people. When prices are falling they are more inclined to postpone purchases of materials and construction; unemployment spreads and incomes decline.

The Quantity Theory

Among the earliest attempts to explain variations in the value of money are variants of what has come to be known as the Quantity Theory. From the common observation that things are more valuable when they are scarce and less valuable when they are plentiful, it was natural for people to ascribe the same characteristics to money. From this generalized appreciation of the effects of changes in the quantity of money, later analysts clothed the idea with more and

more precision until it reached its most highly developed state in fairly recent years in the writings of Irving Fisher and E. W. Kemmerer.¹ Analysis of current monetary problems usually goes beyond the area included in the Quantity Theory, but the theory remains basic to such analysis. For the purposes of this discussion, the supply of money may be thought of as the total stock of money in existence at any given time. The number of dollars would thus consist of standard money, government credit money, bank notes, and bank deposits subject to check. The total supply of money would change with changes in these factors.

Supply of Money

One of the tenets of the Quantity Theory is that in the long run the total quantity of money tends to remain about the same multiple of the existing standard money. This is not to deny that it may fluctuate considerably over a short period, but to insist that there are factors at work to restore a sort of equilibrium relationship. This conclusion is based on the following reasons. In a gold standard country, the amount of standard money does not change rapidly. The volume of gold is the product of centuries and will not be altered much by annual production and imports and exports. In fact, exports and imports tend to balance. Secondly, in normal circumstances the volume of currency bears a fairly fixed relationship to the volume of standard money because the government guards against the falling of gold reserves to too low a percentage. Furthermore, the amount of currency in the hands of the public on the one hand and the amount in bank reserves on the other, tend to bear a consistent relationship to each other. People carry with them whatever amount is convenient and leave the rest on deposit. Finally, on the basis of this volume of bank reserves, the banks are inclined to expand their deposits as far as possible because of their aversion to maintaining nonearning excess reserves. Consequently, the quantity theorist reasons that, given a certain volume of standard money, all of these factors tend to maintain a certain volume of circulating media, and that fluctuations from this volume will eliminate themselves. In the long run, then,

¹ For example: Kemmerer, *Money and Credit Instruments in Their Relation to General Prices* (2nd edition, 1909); *Money* (1935); Fisher, *The Purchasing Power of Money* (1911). This discussion does not follow any one writer closely and, in fact, differs in some respects from the explanations given by the writers mentioned.

changes in the supply of money depend largely on changes in the monetary stock of gold or other standard material.

In the short run, these relationships may be widely distorted. Discoveries of rich gold mines may greatly increase the volume of standard money and require a transition period in order that bank loans and deposits may "catch up." The government may issue large quantities of credit money, as during the Civil War, so that paper becomes the standard, and the volume of money may fluctuate widely. Again, periods of extreme business optimism or pessimism may lead to unusually large or unusually small bank loans and deposits.

The Demand for Money

The demand for money may be thought of as all of the things that might be offered in exchange for money. The supply of any individual commodity is usually defined as the amounts of that commodity that would be sold at various prices: this is the supply "schedule" for that commodity. The supply of a commodity can equally be thought of as a demand for money. The more willing people are to sell their commodities, the greater their demand for money. An increase in the wheat crop thus may be thought of as an increase in the supply of wheat or as an increase in the demand for money, with a tendency to depress the value of wheat or to raise the value of money.

Writers like Kemmerer and Fisher emphasized the medium of exchange function of money. In this view, people want money primarily to spend; if not to spend immediately, then to spend in the future. In contrast to commodities, which are wanted for themselves to satisfy wants directly, money is wanted so that it may be passed on in exchange. Money itself cannot be eaten, worn, or otherwise consumed.² Therefore, the quantity theorist thinks of the elasticity of demand for money as unity. That is, whatever quantity of money there may be, the total stock of goods and services to be sold for money will represent the demand for that stock of money. If there were a great many goods there would be a great demand for money; prices would be low, since people would exchange a large volume of goods for a small volume of money, and the value of money would therefore be high. If there were few goods there would be a small demand for

² Allowance always has to be made at this stage of the argument for the miser, who does enjoy having money for its own sake.

money; prices would be high, and each unit of money would not be worth so much. The total stock of money would be worth the same as before, in either case, since the money is desired merely as a medium of exchange. The value of each monetary unit, therefore, would fluctuate in proportion to the change in the demand for it.

This may be illustrated by hypothetical figures drawn up to show the nature of a demand with elasticity of unity. Suppose first that we postulate an unchanging number of dollars and an increasing volume of goods to be exchanged for dollars. We would have some such results as these:

<i>Volume of Money</i>	<i>Volume of Goods</i>	<i>Average Prices</i>	<i>Total Value of Goods</i>
\$100	10	\$10.00	\$100
100	12	8.33	100
100	15	6.66	100
100	20	5.00	100

On the other hand, let us assume instead that the volume of goods to be traded remains the same but that the volume of money increases. Then, if the demand for this money has an elasticity of unity, we would have:

<i>Volume of Money</i>	<i>Volume of Goods</i>	<i>Average Prices</i>	<i>Total Value of Goods</i>
\$100	10	\$10	\$100
110	10	11	110
120	10	12	120
130	10	13	130

Thus, in order that the available stock of money may "go around" when people have more goods to trade for money, they must offer more goods for a dollar and offer less dollars for goods. Conversely, when goods are scarce people offer more of the existing stock of money for goods, and average prices rise.

The Quantity Theory is thus an application of ordinary supply and demand analysis to the particular problem of the value of money. The conclusion that value "varies directly with demand and inversely with supply" is merely the usual statement of the law of supply and demand. The additional step in the argument is the contention that the value of money not only varies directly with demand but also

proportionately with it, and not only inversely with supply, but proportionately with it.

The Equation of Exchange

The examples just used to illustrate the nature of the demand for money covered only the possibility that the goods in the problem were to be sold once. We have not investigated the problem of the effect on prices of changes in the rapidity of turnover of money. This problem is brought out in the "equation of exchange," employed by quantity theorists to express the relationships implied in the quantity theory.

This equation is usually written :

$$MV = PT, \text{ or } \frac{MV}{T} = P.$$

In this equation M is the volume of money, V is the average number of times each unit of M is spent during a period of time, T is the aggregate of goods and services, including securities, bought for money, and P is the average price of the items making up T .⁸ Thus MV is the amount of money spent in a period and PT is the value of what it was spent on. There may be a stock of \$100 which is spent, on the average, five times per period, making total expenditures of \$500, or perhaps there is a stock of \$250 spent twice during the period, again making total expenditures of \$500. Regardless of the values of M and V , whatever is spent is spent for something, so the right hand side of the equation is an equal quantity. If \$500 has been spent, it was spent for \$500 worth of something. This may have been 50 units with average prices of \$10, or 500 units with average prices of \$1.00, or any other combination, but the fewer the units of goods that changed hands, the higher the average prices must have been. Whenever the same goods were resold during the same period, money again was employed in the same way as in the first sale, and such duplications resulted in larger values for both V and T . In other words, MV is the supply of money, T is the demand, and P is the result.

Sometimes, to illustrate the existence of different kinds of money, the equation is written: $MV + M'V' = PT$, where

M is the quantity of currency,

⁸ As used by Kemmerer, *Money*, p. 33.

V is its velocity of circulation,

M' is the quantity of bank deposits subject to check,

V' is their velocity of circulation.

Velocities

We have already mentioned the reasons for concluding that the quantity of money (M) tends to return to a normal level, given a certain volume of standard money. The quantity theorist similarly contends that the velocity of circulation of money has a normal level or rate, from which it may be disturbed but to which it is likely to return. The reason for this is that the velocity of circulation of money depends largely upon the organization and convenience of the economic system. If it is the custom, for example, to pay wages weekly, then wage earners receive funds on a certain day and spend them during the next seven days. If a person receives \$25 a week, he obtains and spends money four times as fast as he would if he were paid \$100 monthly, although in either case his total income is the same; \$1.00 does the work of \$4.00.⁴ Twenty-five units of money suffice to finance his income and expenditures instead of 100 units, because if he were paid monthly some of the units would be idle during the month.

Similarly, if people are accustomed to borrow money for emergencies there is less need for hoarding it, and money circulates faster. In the same way, the existence of banks enables people to save without hoarding currency, and money is not slowed up. The organization of the money system affects velocities, in that a modern banking system makes possible the transfer of funds across the country in days or even hours. The reader may think of other similar factors influencing the velocity of money, such as whether income receipts customarily coincide with disbursements, whether they are regular in amount, and so forth. The quantity theorist contends that these factors are independent of the volume of money and do not change rapidly, and that therefore the velocity of circulation of money has a strong tendency to remain the same, although it may change temporarily. This idea is partially the same as that expressed above to the effect that people want money primarily to spend. Temporary fluctuations may occur in the rate of getting and spending

⁴ Assuming four weeks to the month, which is not quite accurate.

money, but the underlying determinants of the rate are always at work to re-establish the "normal" rate.

The Volume of Transactions

Similar points are raised in connection with the T in the equation, the total volume of all those things commonly exchanged for money. The quantity theorist points out that production is a function of the natural and human resources of a country and of the state of knowledge existing at the time. The extent to which this production enters into monetary transactions depends upon the extent of barter, and such things as the degree of integration of industry. For instance, if Company A buys materials from Company B, and later the two companies merge, the transactions that formerly took place between them disappear, and the AB Company produces its own raw materials. The volume of securities outstanding, the degree of use of capital, and similar factors affect the volume of goods produced and services exchanged for money. Again, however, the quantity theorist points out that none of these factors depends upon the volume of money or changes rapidly, and therefore that changes in T tend to be short-lived.

Summary of Quantity Theory

The quantity theorist thus concludes that the demand for money tends to be rather stable, and hence he expects changes in the value of money to result mainly from changes that may take place in the supply. Although, as we explained above, the quantity of money normally tends to be about the same as long as there is about the same volume of standard money and bank reserves, he can then proceed to show that when changes in the volume of money do take place they are reflected in the long run in changes in the price level. For example, a rising trend of gold production will gradually expand monetary reserves, so that banks will expand their deposits proportionately, and in the face of the stable demand for money, the value of each dollar will decline. Furthermore, the quantity theorist claims that it must decline in proportion, owing to the elasticity of demand of unity. A doubling of the quantity of money would lead to a decline of one half in the value of the dollar, as the total stock of money maintains the same total value. In other words, in terms of the equation, if the

quantity of M increases, and V and T stay the same, then P must move proportionately with M . Stated another way, "The price level varies directly and proportionately with the volume of money."

Obviously, the extent to which this statement is true depends upon the extent to which V and T do remain the same. The application of the Quantity Theory and the equation of exchange thus involve an analysis of the movements of all four factors over a period of time. Before entering this field (in the next chapter), however, we will survey another approach to the problem, the analysis that centers attention on people's handling of their cash balances.

The Cash-Balance Approach

British economists in particular have developed the Quantity Theory along somewhat different lines of emphasis.⁵ The cash-balance approach involves a somewhat different way of thinking of the demand for money. These economists thought of the demand for money as an expression of people's desire to have money as such. Everyone wants a certain amount of money to hold as money. When we want to hold larger balances, we may say our demand for money is greater. We still measure demand in terms of other things, since, if we decide to hold larger cash balances, we refrain from buying at existing prices. The emphasis is thus placed upon the desire to have money for itself—the desire to have cash balances. In many ways this approach provides a more useful analysis of the demand for money and therefore of changes in its value because it directly ties up people's actions concerning money with their valuations of it. This approach is also more in line with our usual notion of the meaning of demand. Using the same concept of the supply of money as was described above, we may say that the more people want money the more valuable it will be. A greater demand for money will affect the price level by causing it to fall. This is the same thing as saying that people will offer more goods for the same money.

Demand and Velocity

It thus appears that the concept of the demand for money thus expressed is the reverse of the concept of the velocity of circulation of money. The less people wish to hold their money, the more quickly

⁵ For example: D. H. Robertson, *Money* (1922).

they spend it; the oftener money changes hands, the higher is the velocity. This illustrates the fact that the cash-balance approach is not a separate theory, but one variant of the Quantity Theory. The variation is simply that what is an increase in demand from one point of view (cash balance) is a decrease in supply (V) in the other view.

"Examining the concept of the demand for money more closely, we find that people and business firms tend to maintain cash balances in the amounts suited to their circumstances and conveniences. The size of a person's cash balance is dictated by the amount of commodities (including services and securities) over which he wishes to have command at any time. The maintenance of a cash balance involves both advantages and disadvantages. It permits one to take advantage of bargains when they appear, to pay debts as they fall due, and to have a margin of safety in case income stops. The fact that many personal and business expenditures fall in lump sums virtually requires the maintenance of cash balances. A person who must meet a \$100 life insurance premium, for example, may wish to build up in advance a balance large enough to allow this addition to his other living expenses.⁶ The mere fact that most incomes are not received daily means that some funds must be kept from payday to payday. A person whose wages are \$50 a week and who spends all of them has a declining balance during the week, \$50 at one time and zero later. If he spends at an even rate, he has an average balance of \$25. Another person whose income is \$100 a week may also spend all of it but have a previously saved minimum of \$100, so that his balance fluctuates from \$200 down to \$100 and back again. Such a person would have a minimum cash balance equal to one week's income and an average balance somewhat larger, probably equal to the income of a week and a half.

The maintenance of such a balance, of course, has this disadvantage: it requires that one abstain from the acquisition of consumer goods that could be enjoyed immediately, or income-producing assets. Therefore, everyone more or less keeps his cash balance in whatever proportion he thinks proper to the existing stock of goods and services. The total demand for money is the sum of all of these individuals' demands to keep a certain fraction of this stock in the

⁶ The alternative to building up the balance in advance is to borrow. Borrowing spreads the cost over future months; the other way spreads it over prior months.

form of money. If we express this demand by the symbol K , it may be thought of as a fraction of T . Thus, if society on the average attempts to keep balances equal to one-half the value of goods sold in a year, $K = \frac{1}{2}$, or if one month's sales are the figure, $K = \frac{1}{12}$. To repeat, this is the reverse of the velocity of circulation, because, if people spend their money receipts in such a way that they have on the average $\frac{1}{12}$ of a year's expenditure, they spend the money 12 times a year. Thus K is the reciprocal of V , or $K = \frac{1}{V}$.

The Income Variant

The concept expressed in the symbol K has just been described in terms of transactions, in order to be consistent with the description of the transactions type of Quantity Theory. However, K need not necessarily be thought of as a fraction of T , but as a fraction of a year's income. In fact, the writers who use the cash-balance approach generally have such a concept in mind. As we said above, each person more or less consciously maintains a certain fraction of his annual income in the form of cash. Since this is true of everyone, we may say that society maintains a certain fraction of the annual national income in the form of cash.

Let us suppose, to illustrate the application of this idea, that the demand for money increases. There will be increased desires to maintain cash balances. At existing prices, people will have to hold more dollars if they are to command a larger fraction of a year's income. As they hold back more of their incomes and spend less, in order to make their balances grow, the demand for commodities will be less and prices will tend to fall. The larger balances must be built up by saving, but everyone cannot have a larger balance unless there actually is more money. There is nothing in this process that creates more money. What one person accumulates in his balance comes from the balances of others. On the other hand, although the public as a whole cannot build up larger balances in this manner, it can make the balances worth more through the fall in prices that takes place. At the lower prices, a \$100 balance may command enough more goods and services to satisfy the owner's increased demand for money.

The total of all the balances is the same thing as the supply of money. At any given moment, each unit of money must be in some-

one's balance. This process of the holding or spending of money determines what the units making up the supply will be worth, since it causes changes in the price level that reflect changes in the value of money.

The Cash Balance Equation

Since K is simply the reciprocal of V , the Quantity Theory equation previously used may be rewritten as $M = KTP$. Transposing these symbols into words, we have: "The volume of money is equal to that fraction of a year's transactions over which people hold command in cash balances, times the average price of the items making up those transactions." Alternatively, we have: "The volume of money is equal to that fraction of a year's income over which the public holds command in cash balances, times the average price of currently produced goods." As in the equation $MV = PT$, it is apparent that a change in M results in a proportionate change in P , as long as K and T remain the same.

For the same reasons as explained for V , K may change from time to time, but tends to restore itself to some normal level. It is argued, therefore, that a change in M will lead through a transition period to a proportionate change in the price level. During the transition period K and T both may change.

The recent war period illustrates an increase in M in the equation. As the volume of money increased, people found that their balances were rising, both in terms of monetary units and purchasing power. Their natural tendency, therefore, was to spend the superfluous parts of their balances. As these balances were spent, they automatically became part of other people's balances, which for the same reasons became superfluous and again were spent. In the absence of special circumstances, the spending spree would tend to continue until the price level had risen just sufficiently to reduce the value of existing balances to that which people wanted to hold. However, there are always "special circumstances." During the war many people were satisfied to see their balances rise because they were saving for post-war purchases of commodities not available during the war. The government's urging not to spend had some effect. People also purchased large quantities of new government bonds instead of commodities, so that the commodity price level was not subject to the

same pressure. The bonds served to increase T . If we use as illustration a recovery period we usually find an increase in T taking place in accordance with increased expenditures. The combined changes in K (or V) and T result in a rise in the price level either more or less (during the war much less) than in proportion to the change in M . However, the Quantity Theory goes on to contend that in the long run T will be restored to its normal level based on physical and human factors and that K probably will return to where psychological and economic factors had it, so that P must continue to change until this "equilibrium" point is reached. These transitional periods are examined in the following chapter.

XXXII

CHANGES IN THE SUPPLY OF MONEY AND THE PRICE LEVEL

THE PRECEDING CHAPTER explained the reasoning in the Quantity Theory which concludes that in the long run the price level will vary with the volume of money. In this chapter, we will consider some of the examples of changing price levels and the changes in the other factors in the exchange equation that accompanied them.

Short-run Changes

No one contends that changes in the price level over short periods correspond exactly to changes in the volume of money; in fact, if such contentions should be made, they would quickly be refuted by numerous examples to the contrary. The reason for believing that long-run changes in the price level are proportionate to changes in the volume of money is that V and T are believed to be determined by factors independent of the volume of money. While the volume of money is changing, however, pronounced changes in its rate of circulation and in the physical volume of trade are likely to be induced. The short-run problem, then, is to examine the results of these changes in V and T . This problem is quite distinct from the conclu-

sion that, when the volume of money ceases changing, velocities and the volume of trade will tend to settle at the levels existing before the initial change.

In view of the factors in the exchange equation, there are eight possible changes that could take place. The volume of money may increase or decrease, with four obvious possibilities in each case. These are:

1. Increase in the volume of money, and
 - A. Increase in V , with
 1. Increase in T , or
 2. Decrease in T .
 - B. Decrease in V , with
 1. Increase in T , or
 2. Decrease in T .

The same four possibilities exist, of course, for a decrease in the volume of money. We will now consider the relative likelihood of these various possibilities.

Increases in Volume of Money

When the volume of money rises the immediate result is an increase in the balances held by individuals and business firms. As a matter of fact, this increase is not actually the "result," as it really occurs synonymously with the increased volume of money. Usually an increase in M comes from increased bank loans and investments, the additional funds working their way into circulation as the original borrowers and then others spend them. As people find their balances larger than normal, they most likely will increase their rate of spending, as explained in the last chapter. Rate of spending in this context means dollars per time period, and may not be an increase in V , unless the rate increases faster than M .¹

As a matter of fact, however, V is likely to increase while the volume of money is rising. There are several reasons for this occurrence, the most important perhaps being the expectation of higher prices. If people are aware of the inflation of the money, past experience teaches them that higher prices are likely. Hence, many purchases are made immediately in anticipation of the higher prices, and

¹ To illustrate, let $MV = E$ (expenditures). If M is 10 and V is 5, E is 50 per time period, and if M rises 10%, we have $11 \times 5 = 55$; the rate of spending is higher. V does not rise unless E rises by more than 10%.

the immediate purchases help to bring about the higher prices that were expected. The rising volume of bank loans may be merely a symptom of improving business conditions, under which higher prices also are anticipated. At such times most individuals and business firms probably will spend their funds more quickly. If the expectation of higher prices leads to a speculative boom, such as took place in securities and real estate in 1925-1929, goods and securities change hands many times for money, and V is increased still more. If employment improves and wages rise, or even if people only expect them to, the necessity of maintaining balances for contingencies and emergencies is lessened, and V rises (K declines).

One of the best examples of the opposite situation, where the volume of money increases but velocities decline, is offered by the situation in the United States during the late 1930's and again during the war. Government borrowing from the banks in both periods led to increases in the money supply (as did gold imports during the 1930's), but other factors kept expenditures from increasing at the same rate. Consequently, there was a reduction in the velocity of turnover of money and average prices did not rise in proportion to the increase in the supply of money.

If the velocity of circulation should increase without any increase in the volume of trading in goods, services, and securities, the average price of these items would rise even faster than would M . This might be the situation towards the end of a period of prosperity when many industries are operating close to capacity and rising prices fail to bring forth additional output. The delay required by the construction of additional facilities creates a "bottleneck" that restricts supplies of goods. During a depression, on the other hand, rising monetary demands for commodities often can be met by increased production so that prices are not bid up. Additional expenditures are matched by additional goods, so that shortages which might raise prices do not develop. At any point in the process, the actual change in the price level would differ from the change in M according to the extent to which either V or T increased faster.

Decreases in Volume of Money

Decreases in the supply of money are likely to be accompanied by decreases in the rate at which money circulates. A decline in the vol-

ume of money usually is associated with a decline in the outstanding volume of bank loans and investments, which in turn normally would be associated with a period of declining business activity. During such periods businesses are not borrowing as rapidly as loans are being repaid. Instead of spending their receipts for productive purposes, businesses are retiring debt and reducing their balances in the process. Their receipts represented the transfer of other people's balances to them, so that the total balances of the community are reduced. People for a while probably maintain their normal rate of spending, but as they find their cash balances being reduced in this process many begin to curtail their spending in order to hold their balances at the figures they consider normal. The decline in demand reduces the prices of commodities, and again the process may become cumulative. If people anticipate lower prices, they may postpone purchases. Businessmen, in particular, will do so as much as possible. The resulting restriction of sales further depresses prices, while the decline in V probably is more rapid than that in M .

Conceivably, the physical volume of trade could decline with equal rapidity so that the price level would not fall under these circumstances. Usually, however, T does not decline fast enough for this result. The output of many things, principally farm products, is not quickly responsive to price changes. Crops even may be increased, rather than decreased, as farmers feel that they must work harder under the impact of lower prices for their products. Manufacturers usually find that it is cheaper to restrict production than to cease it, and during such periods a large volume of goods may be produced at losses. As a result of these interacting factors, it is unlikely that the actual movement of the price level will correspond proportionately to the decline in the volume of money.

Figure 47 illustrates that the price level has a long-run tendency to fluctuate with the volume of money; but without any very close correlation owing to the factors discussed above. Periods of rising money supply are associated with periods of rising prices, and vice versa, but either may rise or fall faster than the other. The tremendously greater rate of increase in money supply than in prices during the war is obvious. Money was changing hands much more slowly in this period than in most prewar years.

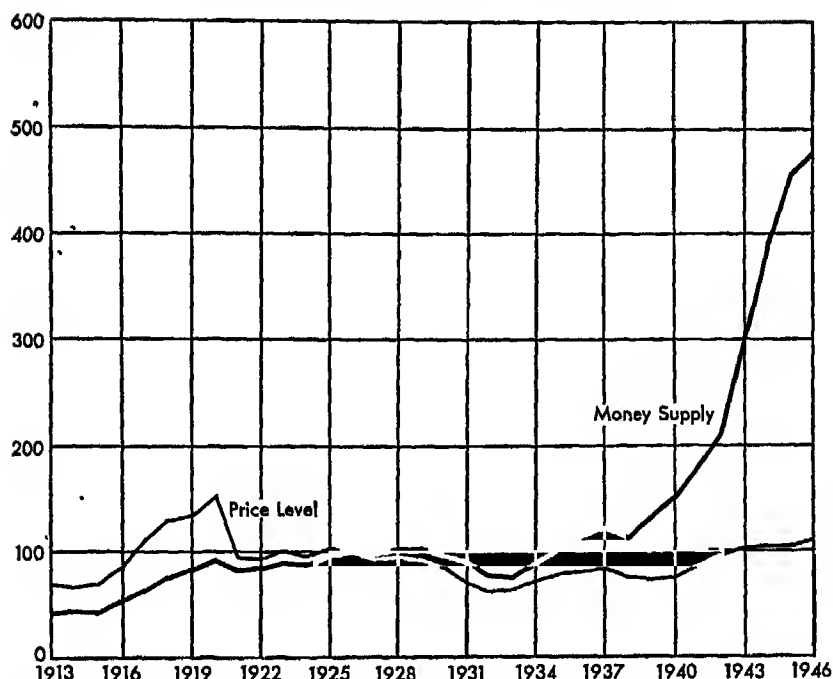


FIG. 47.—Indexes of Wholesale Prices and the Money Supply, 1913–1946. (1926 = 100)
(Money supply: demand deposits except interbank, plus currency outside banks, converted to index.)

Price Dispersion

Periods of changes in average prices witness striking divergence in the prices of different types of commodities. As was mentioned in the last chapter, it is for this reason that price-level changes are disruptive to normal economic relationships, for they throw the advantage first one way and then the other as between debtors and creditors, employer and employee, taxpayer and bondholder, and other groups. Some prices change very slowly, if at all. Postal charges, for example, are scarcely responsive to changes in supply and demand. Public utility rates, railroad rates, and such charges change only through cumbersome administrative processes. Tax rates respond to many factors influencing legislators. Wage rates may be determined by collective bargaining agreements covering a year or longer. Some raw materials, like iron ore, may be sold on contracts covering an annual period

during which the price is fixed. On the other hand, many prices are normally free from legal and contract restrictions but do not fluctuate often because of the monopolistic or semimonopolistic positions of the sellers. Price policy in some industries apparently is to hold prices as stable as possible and to allow changes in demand to be reflected in rising and falling sales, while other industries attempt to stabilize output and to vary prices as seems necessary to accomplish this end. Companies in more completely competitive industries have little or no influence over the prices they can obtain, and prices may fluctuate from day to day and react quickly to changes in monetary demand.

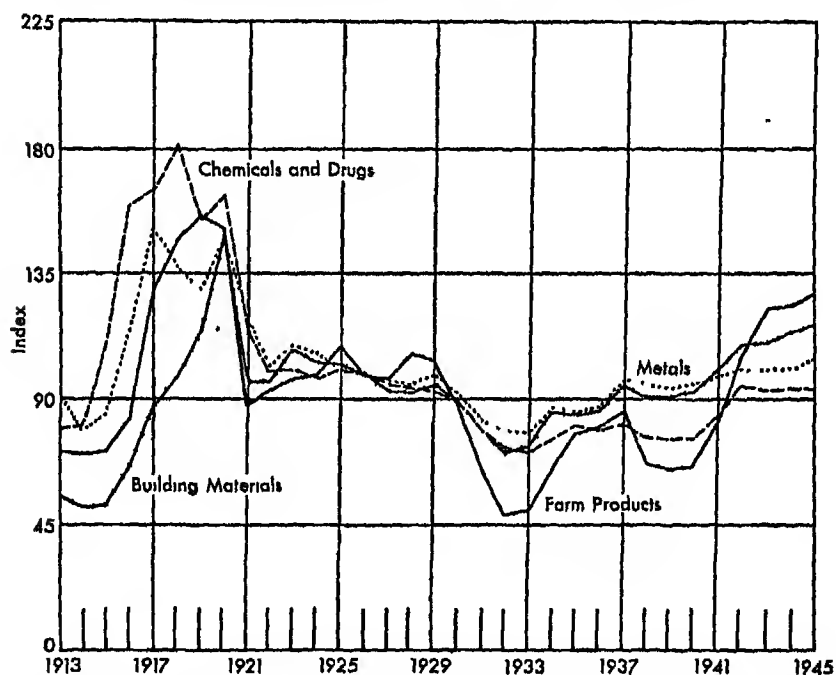


FIG. 48.—Indexes of Wholesale Prices of Farm Products, Building Materials, Chemicals and Drugs, and Metals and Metal Products, 1913–1945. (Bureau of Labor Statistics data)

During the great depression of the 1930's the production of automobiles, agricultural implements, and iron and steel fell to very low percentages of 1929 output, but prices declined relatively little. With the cessation of demand for steel for automobiles, agricultural implements, construction, and similar uses, very little steel could be

sold, probably, at any price. Steel producers are so few in number that they could in a sense rely upon each other to recognize this fact and to maintain prices on the theory that price-cutting would lead to lower prices all around and not much increase in sales for anyone. On the other hand, the production of farm products and food products was about the same in 1932 as in 1929, and became known as "surpluses" as the output could be moved only at prices much below those of 1929. The competitive situation among thousands of farmers, of course, required each to take whatever price the market afforded.

The price indexes of four groups of commodities are plotted in Figure 48. This chart illustrates how different supply and demand relationships in the different types of business have led to different rates of change in prices.

TABLE 80

PERCENTAGE OF PRICE INCREASE, AUGUST,
1939 TO MAY, 1946; VARIOUS COM-
MODITIES

Category	Increase, Per cent
Rayon	6.0
Cement	12.4
Iron and steel	13.4
Chemicals	16.8
Petroleum	22.8
Shoes ..	27.9
Bituminous coal	30.5
Crude rubber	32.4
Brick and tile	33.1
Cereal products	39.5
Paper and pulp	44.1
Clothing	46.7
Woolens	49.3
Meats	49.9
Dairy products	72.3
Lumber	91.5
Fruits and vegetables	140.3
Oils and fats	151.5

Source: *Monthly Labor Review*, July, 1946, p. 117.

These groups of commodities are broad, and many divergent movements within the groups are concealed by the average figures for the groups. Table 80 shows the percentage increase in price for

various commodities between August, 1939 and May, 1946. These divergent movements reflect the different wartime demands for certain products, the inelasticity of supply, and the effectiveness of price control in certain fields.

Long-run Changes

The types of price changes discussed above are associated with the business cycle and involve numerous theoretical issues that have been ignored in this chapter. These will be touched upon somewhat more fully later. There are also long-run changes in the price level, associated with secular changes in monetary conditions and in the level of goods and services available for trade. These long-run trends can be discerned as underlying the more violent changes that have been superimposed upon them by temporary conditions.

If the volume of money increases slowly and without any considerable publicity, there is no particular reason that people's evaluation of their cash balances should change suddenly. A gently rising price level over a period of ten or twenty years does not involve changes sufficiently drastic to lead people to alter their normal spending habits in order to anticipate expected price increases. Hence, as the slightly larger balances appear and people neither hold them nor attempt to get rid of them, but merely spend them as they have been accustomed, the price level tends to adjust itself gradually to the changed conditions of M and T . Such a situation could exist in a country on a gold standard during a period when gold production was leading to gradually rising monetary stocks. The increased monetary stocks would show up as bank reserves, with gradually rising bank loans and investments. The periods 1840-1860 and 1895-1915 in this country were periods of slightly changing price levels without any serious developments leading to drastic changes in the velocity of circulation of money.²

In the long run there are certain changes which may be expected in V and T , however. Instead of remaining the same, as argued by some quantity theorists, they both may be expected to increase slowly. These increases may incline to offset each other, so that the tendency for P to vary proportionately with M remains. Over long periods of

² From 1842 to 1861 the price level was unusually stable, with small annual fluctuations; from the depression of 1897 to 1915 the price level rose gradually nearly every year.

time V may be expected to increase because of the development of financial facilities and more rapid communications. The development of banking means that loans are more available; bank deposits may be used instead of hoards of currency, and for both reasons there is less necessity to hold money out of circulation. Rapid communications mean that funds may be transmitted more quickly and the receiver pass them on more quickly, so that a given dollar may change hands more times in a year. Similarly, over long periods of time T has increased gradually, as a result of improving productivity, the cumulative effect of inventions, the greater accumulation and use of capital, and the increase in productive knowledge and techniques. Whether the publicized wartime developments for the speeding up of production will only temporarily distort this trend or alter it fundamentally, one cannot say.

In any event, one may note that during the history of this country the volume of circulating media has increased manyfold but that the volume of things bought and sold for money has also doubled and redoubled. At times it might have appeared that the combined effect was a long-run tendency towards falling prices and at other times towards rising prices. In the period 1921-1930, for example, many queries were raised as to the likelihood that world price levels might fall as a result of the fact that the production of goods was outstripping the production of gold. Fifteen years later, of course, the principal monetary problem was to prevent a sudden and disastrous rise in prices.

War and Prices

Price disturbances during wars are so pronounced that they deserve special mention, although little separate analysis will be provided here in view of the discussion of finance during the war in Chapter XXVIII. Any chart of the level of wholesale prices in the United States is dominated by peaks corresponding to the important wars. Three sharp peaks appear for the War of 1812, the Civil War, and World War I. The success of price control during World War II prevented as sharp or as high a rise during hostilities, although as far as the problem of inflation is concerned the war did not cease with the surrenders of Germany and Japan. The large volume of money seeking goods left a serious economic problem.

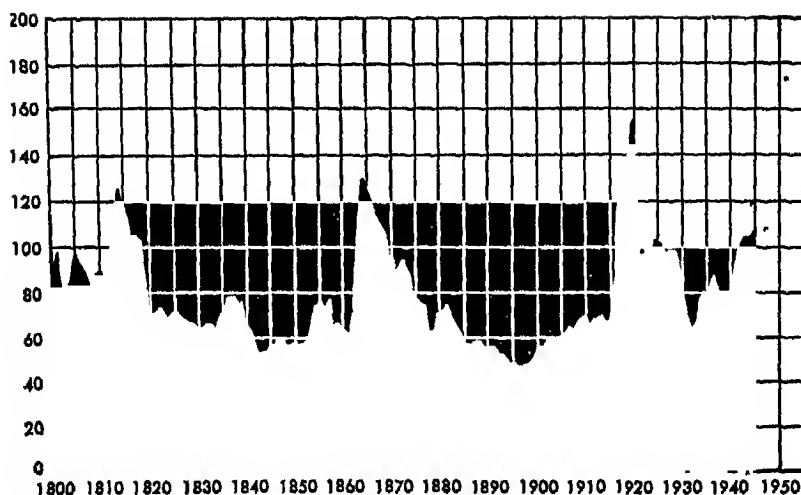


FIG. 49.—Index of Wholesale Prices, 1800–1945.

Wars are accompanied by sharp price inflations, of course, for the simple reason that the volume of money invariably is increased drastically by a process of deficit financing. The failure of governments to obtain all of their needed revenues from taxes and savings which have been turned over for bonds requires that large sums be obtained from the banking system as loans. The expenditure of these sums is in addition to other expenditures and represents tremendous increases in the demands for commodities. The extent of the price rise for civilian goods is usually magnified further by a decline in the volume of goods available and an increase in the velocity of circulation. Productive facilities are converted to the production of war materials or their normal civilian output is put to war uses. Manpower is drained off for the armed services. Perhaps still more materials are diverted to the use of allies. The result is an "inflationary gap" between the value of current production at current prices and the monetary incomes people have available to spend on current output.⁸ When people attempt to anticipate further rises by hoarding available supplies, an extra fillip is added to prices. The price level was so completely under government control during the war of 1941–1945 that it merits separate attention in a later chapter.

⁸ The problem of the inflationary gap and OPA's attack on the problem are described in Chapter XXXV.

Gold and the Volume of Money

Previous discussions have brought out the fact that the gold standard is a mechanism for tying the volume of money to the supply of gold. The operation of this mechanism makes possible certain conclusions concerning the value of gold and the value of money. We shall examine briefly the reasoning used to explain the connection between the supply and demand for gold, and therefore its value in connection with that of money.

If we assume an increase in the annual supply of gold, owing to the discovery of new mines or techniques of mining, the increased flow must be absorbed in either the monetary use or nonmonetary uses. The existence of a fixed mint price allows any gold not taken by industrial users or hoarders to flow to the mint. In the past large amounts of gold have been absorbed into the hoards of the Orient, particularly India. These hoards seldom reappeared, although the high purchasing power of gold during the early 1930's tempted some out of hiding. In the absence of an increased industrial demand for gold, however, the proportion of the annual supply going into monetary reserves would tend to rise with an increase in production.

The extent to which the increased government purchases would increase the total volume of money would depend upon the extent to which the new reserves become the base for further monetary expansion. If the money system consisted only of gold coins, a situation which has not existed in modern times, then the increased coinage would automatically increase the supply of money. Even so, the increase might not be appreciable because the annual output tends to be a small part of the total existing stock. In a modern money system, however, there are two further possibilities for expansion: the extent to which the commercial banks expand their loans and investments with the new reserves, and the extent to which the central bank may provide still further bank reserves by the expansion of its loans and investments. A given increase in the monetary gold stock, therefore, may result in a rise in bank deposits of several times the original increase. On the other hand, the central bank may take measures to "sterilize" the augmented gold supply so that bank reserves cannot be increased. This might be done by open-market sales, timed to remove reserves at the same rate as the gold inflow increased them.

The Bullion Approach

Some writers, notably J. L. Laughlin in this country, have maintained that the proper chain of cause and effect in the determination of the value of money is virtually the reverse of that described above as the Quantity Theory. These writers⁴ think that the value of money is determined by the value of gold (or other standard commodity). They would argue that the pricing process is a comparison of the value of a certain amount of gold (called a dollar) with the value of the commodity being priced. Thus, should the value of gold fall, prices would rise. The higher prices would justify larger bank loans, so that, in this view, the volume of money would be determined by the price level instead of the other way around. Money would have no value except for the fact that it is redeemable or likely to be. An irredeemable paper currency would not become valueless, because there is the prospect of future redemption, as in the case of the greenbacks.

This view never has been widely held by economists. In the first place, strict adherence to the Bullion Theory rules out the possibility of a permanently operating paper standard. It would appear to be obvious that in a country where a given volume of irredeemable paper money and bank deposits is maintained, there would be no reason to suppose that the money is worthless. It would serve a useful function as a medium of exchange and would be valuable for that purpose regardless of its physical constitution. True, its value might be considered to be "artificial," in that, if people were free to produce such money, the great profit possibilities would lead them to do so; in such a case the supply would increase and the value per unit would fall. In the same way, however, the value of any monopolized commodity may be considered artificial in that it is higher in relation to costs of production than that of goods produced under free competition. Paper money may become valueless, not because it is made of paper but because there is so much of it. Gold coins would become just as worthless if they were as abundant.

Strict adherence to the Bullion Theory would lead one to believe further that a change in the gold content of the dollar would immediately lead to a change in the price level. If the pricing process were

⁴J. L. Laughlin, *The Principles of Money* (1903); B. M. Anderson, *The Value of Money* (1917).

in fact a weighing of the value of the gold represented by a dollar with the value of some commodity, the reduction of the gold content by 50% ought to change the price quotation to double its previous level. The devaluation of the dollar in 1934, therefore, should have lifted the price level about 69%, because 23.22 grains of gold became \$1.69 rather than \$1.00. This did not happen for the simple reason that the act of devaluation did not give people more money to spend. They could not offer higher prices than those of the day before nor could sellers demand higher prices. Eventually, of course, the increased number of dollars of gold reserves resulting from a redefinition of the dollar may result in expanded money supply, but in this respect it is no different than the increased production of gold described above.

The Bullion Theory is doubtless correct in concluding that, when a gold standard is in operation, the value of a dollar is equal to the value of the gold "in" a dollar. However, the value of gold itself is determined partly by the number of dollars of all kinds. The more dollars there are, the lower is the value of each dollar, including gold dollars. The value of gold, like that of anything else, is determined by supply and demand. The use of "substitute" dollars lessens the value of gold dollars.

The Cost of Gold and Its Value

If there is freedom of entry into the business of gold mining there will be a tendency that profits in that field will equal those available in other fields. Rising profits will expand production by existing and new firms and falling prices will contract production. Under the gold standard, such changes in profits must come from changes in costs and not in price, as the latter is fixed. Hence, we would expect producers to produce that output at which the marginal cost of gold is equal to the price. If marginal cost were less, production would tend to expand, and vice versa.

The theoretical equilibrium would be reached when there was no tendency towards the expansion or contraction of gold production. However, the attainment of such an equilibrium is difficult. Increased production in all likelihood would raise prices of other goods and thus the costs of production. But the increased annual rate of production may increase the price level, if at all, in varying degree according to

the amount of monetary management involved. Further, the production of gold over long periods is likely to vary with prospectors' luck in finding new deposits, and such prospectors are notoriously unconcerned with the cost and profit ratio of the moment. To the extent that the world supplies of gold become known, this variation lessens.

It is helpful to notice that the various types of nonstandard money influence the value of gold in much the same way as any substitute good influences the value of another. If we used no money but gold coins, money would be very scarce, prices very low, and the value of gold very high. Since standard money is a very small proportion of the total, money is much more plentiful, prices higher, and a given volume of gold worth much less.

XXXIII

BANK CREDIT AND PRICES

THE PRECEDING CHAPTERS dealing with the price level have emphasized the importance of the volume of money in the determination of the price level and of the volume of bank loans in determining the volume of money. These considerations lead us to such questions as: Are all bank loans inflationary? What standards should govern the volume of bank loans?

The Bullion Report

A monetary controversy that took place in England around 1810, with repercussions lasting until the middle of the century, not only serves as an excellent introduction to this problem but is an interesting chapter in monetary history. At that time the Bank of England was operating under a Suspension Act by which gold redemption of its notes was not required. During the Napoleonic Wars the pound depreciated in terms of domestic prices, gold, and foreign exchange. The depreciation reached a point where there was considerable public interest in the inflation, and a Parliamentary Commission investigated the problem of the purchasing power of the pound. It should be remembered that at that time most circulating money was in the

form of bank notes; a similar argument today would deal largely with the value of bank deposits.

Banking Principle vs. Currency Principle

Two opposing schools of thought developed from the inquiry. The managers of the Bank of England presented the doctrine that the depreciation of the pound could not be caused by overissues of notes because such notes were issued only for commercial purposes and were therefore "needed." They contended that the high price of gold and high exchange rates represented a scarcity of gold. The fact that notes were lent only as self-liquidating loans was supposed to insure that the increase in the supply of notes was offset by an increase in the supply of goods, and that when the goods had moved through trade channels the borrower was enabled to repay his loan, and the notes were retired. We will examine this doctrine more in detail shortly.

The report of the Committee, "The Bullion Report" published in 1810, did not adopt this view. In an admirable analysis of the problem, the Committee pointed out that this principle overlooked the possibility that the notes might circulate and tend to raise prices during the interval in which the new goods were coming on the market. "In the first instance, when the advance is made by notes paid in discount of a bill, it is undoubtedly so much capital, so much power of making purchases, placed in the hands of the merchant who receives the notes; and if those hands are safe, the operation is so far, and in this its first step, useful and productive to the public. But as soon as the portion of circulating medium, in which the advance was thus made . . . (is) exchanged by him for some other article . . . (the notes) fall into the channel of circulation as so much circulating medium, and form an addition to the mass of currency." The Committee recommended that the pound again be made convertible so that the issues of notes would be limited and their values be maintained in terms of foreign moneys. Resumption of gold payments did not arrive, however, until 1821.

During the next several years there grew up two opposing schools of thought concerning the proper operation of the Bank of England, which still have considerable influence on banking theory. The Banking Principle, which succeeded the arguments of the bank managers in 1810, contended that bank loans are not excessive if they are made

to finance self-liquidating projects. At the same time, it was admitted that redemption should exist, as it provided a further check on the soundness of loans. Self-liquidating loans, in this view, would not be inflationary, but, if inflationary loans were made, redemption of notes would tend to check the inflation. As prices started to rise, people could exchange their notes for gold, which presumably would maintain its value, and the gold could be spent for imports. The reduction in circulation created by the redemption would help to restore the price level, and also it would require the Bank to reduce its loans owing to loss of reserves.

The fact that the price level did continue to fluctuate in spite of adherence to this doctrine lent weight to the opposing Currency Principle. This school maintained that the only way to stabilize the value of the Bank's notes and the notes of other banks was to make them virtually gold certificates, or in some way require the volume of notes to correspond precisely with the volume of gold. This school gained sufficient support that the Bank Act of 1844 put the Bank of England notes on this basis.

The Bank Act of 1844

This Act, sometimes known as the Peel Act, required the Bank of England to segregate its note-issue function into a separate department. This Issue Department merely automatically exchanged its notes for gold at the official price. Except for a small exempt issue (the fiduciary issue), the notes were thus gold certificates. Gold deposited at the Banking Department could be transferred to the Issue Department for notes, which were then available for loans or the meeting of withdrawals. Similarly, demands for gold reduced the reserves in a 100% ratio. As other banks went out of business or lost their note-issue powers, the note issue became a Bank of England monopoly. By that time, however, the use of bank deposits transferred by check had become sufficiently important that the volume of circulating medium was still in effect not tied directly to the supply of gold.

Banking Principle in the United States

The debate in England, consisting of many pamphlets, speeches, books, and the like, was familiar to many American bankers and theorists. Generally speaking, the American writers prior to 1850 were

adherents of the Currency Principle, in that they concluded from the obvious facts at their disposal that bank notes could be issued to excess and raise prices in terms of the notes. In opposition to this Principle, however, there were two opposing arguments, as there were in England. On the one hand, there was the Banking Principle, with its contention that banks could not issue too much money if their loans were in response to "the needs of trade." On the other hand, there was a group that argued that convertibility made a superfluity of notes impossible. If the notes were redundant they would be redeemed.

The latter group was unable to convince many of those interested in the problem because of the simple fact that redeemability was so difficult during the era of state banking. The general conclusion was that perhaps bank notes would not depreciate if they really were freely redeemable but in fact no such situation prevailed.¹ Hence the principal debate concerned the validity of the Banking Principle.

Stephen Colwell's *Ways and Means of Payment* was published just prior to the Civil War, in 1859. This was an interesting book in that it was one of the earlier attempts to divorce the standard-of-value function from the medium-of-exchange function of money. Colwell pointed out that in modern times monetary units, like the dollar, are not necessarily so much gold or silver, but "units of account"—abstract units of measurement of values. He argued that this abstraction should not be confused with the physical units (coins) out of which it developed, and pointed out that when a monetary unit is fixed in terms of gold, an influx of gold depreciates the money unit as well as the commodity, gold. In his opinion, when gold is plentiful, it should bear a lower price in terms of the money of account, rather than that everything else should bear higher prices.²

The value of bank notes, or other forms of credit such as bank deposits or private debts, is determined in this view not at all by redeemability but by the demand for such credit as money. In Colwell's statement of the Banking Principle, the demand for bank notes would be just sufficient to maintain their value if loans were made for busi-

¹ See Chapter XII—Banking Prior to the Civil War.

² Stephen Colwell, *Ways and Means of Payment*, 1859, p. 50. The argument may be illustrated by the example used at the conclusion of Chapter I in this text: the gold standard affects the measure of value in the same way the measure of volume would be affected if gallon cans fluctuated in size with the supply and value of steel sheets.

ness purposes. The notes in circulation are demanded by debtors of the banks, who need them to repay their loans to the banks. If the loans were originally made for self-liquidating projects, the sale of goods would bring into the hands of the borrowers a sufficient volume of notes to repay their debts, and thus the notes would be retired as soon as the trade which justified them was completed. "The goods are sufficient to redeem the notes issued upon them, and therefore sufficient to pay or redeem the bank notes substituted."³ This bald statement of the principle (which does not do Colwell complete justice), it will be noticed, overlooks the possibility that the notes might be spent several times after the borrower has spent them and before an equivalent amount of money has been returned to the lending banks.

Analysis of the Banking Theory

The Banking Principle is still held in many quarters to be the best banking policy although its adherents are probably fewer than they were in 1930. The Federal Reserve System was established largely upon the premises of this theory, as indicated not only in the Federal Reserve Act but in the popularly used phrase "needs of business" to describe the function of the system.

Effect of a Single Loan

The key to the problem is whether an increased volume of bank deposits arising out of self-liquidating loans is actually offset by the increased supply of goods being financed or whether it is possible for such loans to be inflationary.⁴ Let us take first the situation arising out of a single loan. A manufacturer obtains a loan of \$10,000 to cover wages and other costs of goods which he expects to sell in the near future for approximately this amount. In effect, the loan allows the manufacturer and his employees to consume food, clothing, and other things for the life of the loan. By turning over the \$10,000 to the borrower, the bank gives him a claim to this amount of goods and services. As was pointed out briefly in an early chapter to illustrate the nature of bank loans, this transaction has the further meaning that the producer and his employees will be able to "take things away

³ *Ibid.*, p. 235.

⁴ This analysis of the Banking Theory follows the organization of D. H. Robertson's *Money*, Ch. V., New York, Harcourt, Brace & Co., 1929.

from" the rest of the public with this money while they are producing their own goods for sale. This is done, of course, by the expenditure of the funds, which thus come into the hands of the public.

As the deposits change hands they also change their nature; to the extent that they are increases in the balances of other people they may be considered savings. Now, it may be noticed at once that whether people wish to save or are conscious of doing it, their balances must rise under these circumstances. There are simply 10,000 more dollars, and if the borrower does not have them someone else must. As explained in the chapter on the Quantity Theory, if people do not wish to save these balances they will attempt to spend them. Such action will increase the velocity of their circulation, and tend to reduce the *value* of the balances by raising prices. In this first instance, however, we may consider the added balances as savings as these developments have not had time to take place. The result, therefore, is virtually the same as if the public had *first* saved part of its income and turned it over to the bank to lend to the producer. The bank loan changes the sequence of events in that the borrower gets his funds first and the public does its saving later, probably unconsciously.

This saving has come to be called "forced saving" as it is not premeditated or conscious. If it is carried through the next step where people attempt to reduce their balances, it takes another form. If we assume to begin with that everyone has the cash balance he wants, considering his income and the price level, the new balances would be spent, and they would continue to be spent until prices reach the level at which balances represent the appropriate purchases. The first recipients of the balances would be able to spend them at prevailing prices. As prices are bid up, later recipients could buy less. In this way, some members of the community would perform the "going without" or saving, which transfers the goods to the borrowers.

As the next step in the analysis, let us suppose that the goods are produced and sold to a retailer, that the retailer borrows \$10,000 in order to finance this purchase, and that the producer repays his bank loan as soon as the goods are sold. Thus, the volume of money in this case remains the same, the increase to the retailer being offset by the decrease which takes place in the retirement of the producer's loan. The public has the same balances as before, and this second loan entails no additional saving on the part of the public. If the retailer

should repay his loan in installments as he sells his stock, the banks would be able from time to time to make new loans to other producers and sellers. While more purchasing power is maintained by this continually higher level of deposits, there also is a larger volume of goods to be consumed, owing to the production of the first borrower. In the picturesque words of Professor Robertson,

In a stationary society, the carriage of such a continuous debt of constant amount, even though the individual recipients of loans were constantly varying, would require only that a single act of new saving should have been performed in the dim and distant past by the depositors of the bank. Under such conditions, the making of a bank loan is seen as the act not, as we were at first inclined to suspect, of a fraudulent magician, but of a faithful steward, administering to the best of its ability a fund of congealed saving which has been built up in the past.⁵

Offsetting Voluntary Saving

We may now consider what effect bank loans have in a situation in which the public increases its savings voluntarily. As has been brought out before, the increased savings add nothing to the volume of bank deposits which merely are slowed up in their circulation as people hold on to their balances rather than spend them. As sellers are faced with declining demands for their wares, they must lower prices in order to get rid of them. As a result, the values of balances become higher, and in that sense the savings have materialized, but on the other hand the savers have not gone without anything; the saving has caused no privation, since the public got the usual volume of goods although at lower prices. Hence there is nothing to show for the saving. Various secondary effects on production and employment are very likely to appear, a discussion of which we will postpone until a later chapter. Here we are concerned with the problem of translating the savings, not into lower prices, but into investment.

This investment can take place if the banks expand loans just sufficiently to offset the savings, so that the reduced demands of the savers are offset by the demands of the borrowers. Presumably, the two groups will not be buyers directly of the same items but on the whole the demand of one group for goods in general could be substituted for that of the other. In this case, the new money created in the lending

⁵ *Ibid.*, p. 98.

process would represent the voluntary savings, and would be in the same category as the first loan we examined, with the sequence reversed. This time the savings would come first and then the loan. What requires explanation is that in a modern money system the saving is reflected in a reduction of the V in the exchange equation, and the new loan described here is an offsetting change in M .

This problem requires further analysis later, but it may be well to consider the likelihood that the banking system would expand its loans and investments at such a time. If the demands for commodities are declining, producers are less likely to request loans for production and the banks are less likely to be willing to lend. Hence, we should not assume at this point that the banking system would work in this beneficial fashion.

The Period of Production and Income Velocity

The effect on prices of a new loan in the form of a bank deposit may be expressed in terms of the exchange equation. In its contention that loans should be made to meet the needs of trade, the Banking Principle relies on the assumption that the increase in M is offset by an increase in T .⁶ This would be the natural result of a self-liquidating loan. What we are about to examine, however, is the influence of V . If the producer with whom we started borrows \$10,000 for the period of production, during which time the goods do not reach the market and add to T , his expenditure and the following expenditures of this same money by others may represent a considerable increase in the quantity MV . In other words, the demands for existing goods are increased before there is any increase in the volume of such goods. As was pointed out in the Bullion Report in 1810, such reasoning forms a basis for the skepticism concerning the belief that the volume of money is always at a "correct" level as long as banks make only self-liquidating loans.

The conditions of equilibrium are more clearly defined if we confine our attention to the volume of currently produced goods rather than to the total stock of existing goods. The net volume of currently produced goods may be considered as the real national income. The rate at which money changes hands to generate this real national income

⁶ The originators of the Banking Principle did not have the equation to work with, but this is a fair restatement of the Principle.

will be somewhat different than the general rate of circulation or V . We are here concerned with the number of times each dollar appears as net income rather than as gross income or expenditures. If the national income during a period is \$100 billion and there is a stock of money equal to \$50 billion, each dollar became income twice during the period. This rate of turnover is the "circuit velocity" of money, implying a circuit that money follows from the time it is spent until it is all net incomes again. Many transactions may be financed in the meantime; if the national income is \$100 billion and the volume of money \$50 billion, transactions totaling \$1,000 billion might occur to generate the net incomes and net real national income. If so, V would be 20; each dollar on the average would be spent 20 times.

Comparisons of the national income with the volume of money have indicated that the circuit or income velocity of money normally is fairly stable, at around 3 times per year.⁷ This rate is of course considerably less than the turnover of money against goods. The two rates tend to move together; in periods of rising business activity V usually increases, and as incomes are rising with increased production, V_2 , the income velocity, tends to rise also. The tendency towards a rise in the volume of money, however, is reflected in a much lower rise in V_2 . Money could circulate repeatedly in exchanges of existing goods or securities in speculative markets without any material effect upon real incomes or V_2 .

In order to get the several variables in the problem into manageable order, let us assume in the following paragraphs that demand deposits make up the total quantity of money, an assumption that will enable us to ignore the complications of currency. In order to examine the influence of the period of production on the question of the proper volume of bank loans we will assume two separate sets of possible conditions. First, we will assume that the circulating capital of business has been entirely built up by savings of bank depositors which have been lent to business firms. While this assumption is, of course, not realistic, it is a helpful approach to the problem. The first question relates to the volume of this circulating capital.

At any moment in the process of production goods are in various

⁷ James W. Angell, *The Behavior of Money*, New York, McGraw-Hill, 1936, p. 190. During the 1930's and again during the war this figure declined. It may be that approximately twice a year has become a more standard figure.

degrees of completion. Some have barely begun, others are nearly finished, some are in warehouses, with all sorts of degrees in between. If we imagine that goods move through the process of production at an even rate, and that the volume of production is neither increasing nor decreasing, then *on the average* all goods being produced are half finished. We might imagine an even flow of oil through a pipeline where the oil is "produced," and while the pipeline is full one gallon is just starting and another is just ready to drop out, but the average length of the trip of the total, at any moment, is halfway through. The value of the oil in the pipeline also can be thought of as half the value of the oil when it is finished. This, of course, is not true of a real pipeline, but if we use the pipeline to symbolize all aspects of production the idea has merit. There is some difficulty in grasping the idea at first because goods that are half finished measured by time may be more or less than half as valuable as they will be when finished. But aggregating the processes of production, from the origin of things to be used up in the process to the final processes, we may say that on the average goods are half way "through" and thus the whole mass of goods being produced has a value equal to half the final prices.

These goods in process, along with the goods to be used up, such as fuel and lubricants and paints and so forth, and goods in storage, make up the circulating capital of the business world. The businessman must have funds with which to purchase these goods and services during the process of production, funds which he must either possess or borrow. We may now refine the example of the producer who borrowed \$10,000 by adding the idea of the period of production. If the sales value of his output for a period is \$10,000, he needs \$5,000 on the average. This can be seen most clearly by assuming either that he borrows only what he needs from day to day and checks it out as he needs it, or that at one point he needs the whole \$10,000 but as he acquires funds he pays back the loan. In either event, the amount that he must finance averages \$5,000 over the period. The amount of his indebtedness may fluctuate between \$10,000 and zero, but on the average he is in debt for the amount of his circulating capital. That is the assumption we started with, namely that business firms have obtained all of their circulating capital by bank loans, which were made by the banks to offset the saving of their depositors.

Algebraic Statement of Theory

It is sometimes helpful to put into symbolic form some of the relationships that may now be demonstrated. We have assumed that the total volume of circulating capital has been provided from bank loans, so:

$M = C$ The volume of bank deposits is equal to the value of circulating capital.

$C = \frac{R}{2}$ Where R is the real production during a period of production. If we assume, in order to avoid more fractions, that the period of production is one year, R is also the annual real income. Then,

$M = \frac{R}{2}$ in other words, the volume of deposits is equal to half the national income in dollar terms. This gives us a clue to the velocity of money, because it tells us what cash balances people wish to keep.

$M = K_2TP$ As explained before, this equation illustrates that people influence the price level by adjusting their cash balances to the proportion of the available goods and services over which they wish to keep command in cash. We may also think of this proportion in terms of real national income, or the volume of currently produced goods, only, in which case we have

$M = K_2RP$ and, in view of the preceding equations, it is apparent that $K_2 = \frac{1}{2}$. Since K_2 is the reciprocal of V_2 , $V_2 = 2$ (in this illustration). P is the price level of current output.

We may thus conclude that P is stable if V_2 is actually 2 and remains 2 under the assumptions of this illustration. If all of the other factors of the equation remain the same, then P will not change. The other factors will remain the same if banks continue to make loans only on the same basis, that is, if they make new loans only to replace repaid ones, and if they make them for working capital purposes. Only in this way will the two variables of the rate of saving and the rate of spending be kept in equilibrium. As long as $K_2 = \frac{1}{2}$, the community is providing the same amount of working capital, and, if the banks just keep this volume of loans, and thus deposits, in existence, they are "doing their part." If, however, they lend larger amounts (make new loans in excess of repayments), they will expand the volume of purchasing power, create extra incomes, the spending of

which will raise prices, and cause forced saving sufficient to restore the balance.

Changed Assumptions

As we said above, we were to assume two possible sets of conditions. The first we have just examined, in order to show the conditions under which the banks could make commercial loans to the full extent of the "needs of business" (that is, provide the entire amount of circulating capital) without creating disturbances to the price level and the economic system. It should be realized that the assumptions were made to permit this conclusion. Actually, however, businesses do not obtain all of their working capital from banks, and on the other hand, banks do not make all of their loans as short-term self-liquidating loans. We may have an example closer to reality if we assume that only half of the banks' assets are of this character (the other half being investments in government and industrial bonds and nonearning assets) and that business firms obtain half of their working capital, on the average, from banks and own the remainder. Then we have this set of equations:

$M = 2L$ If M is twice as big as the volume of commercial loans, and commercial loans are half of the circulating capital, we again have—
 $C = 2L$
 $M = C$

Assume now that a business firm attempts to get all, rather than half, of its working capital from banks. Perhaps a businessman decides to spend some of his capital on consumption goods and replace it with bank loans. Then M becomes greater than C and greater than $\frac{R}{2}$ and greater than K_2RP . Assuming for the moment that there is no change in the desire to save and in the volume of production, P must therefore rise. In other words, if, at the existing price level, people tend to spend the increase in M , they must force up the price level until their balances again represent the proportion of R they want them to cover. Furthermore, as far as we have carried the analysis, there is no reason to expect an increase in R , as there has been no increase in the capital used in production. A loan to meet the "needs" of this businessman would, then, tend to raise the price level and cause forced saving in order to create the capital he dissipated. We might

also assume a similar possibility, namely an over-all increase in a firm's circulating capital, the increase being supplied by the banks. This would mean that the business was getting more than half its capital from banks. We again would have the same answer, as M would increase before there was an increase in voluntary saving. A different final equilibrium would be expected, however, in that the larger volume of circulating capital (C) would result in a larger real income (R) at the end of the period of production.

Conclusions

Under these assumptions which more nearly approximate actual conditions, an increase in bank loans, even of the self-liquidating type which leads to increased production, will tend to raise the price level. The degree of the disequilibrium will depend upon the income velocity of money and the length of the period of production. If the income velocity of money is high, the new money will circulate and become incomes and be respent oftener during the period of production. If the period is long, the new money will have a longer period in which to circulate, and thereby affect more transactions and generate more incomes. Furthermore, the disequilibrium will be greater if the fraction of circulating capital previously supplied by banks and the previous proportion of commercial loans to total bank assets are low. It would be less if both proportions were high.

A realization of these conclusions, without, however, a complete realization of how they were arrived at, explains the long-standing aversion of banking theorists to long-term bank loans. The preceding pages have merely refined the old Banking Principle to make due allowance for the period of production and the income velocity of money. While the original statements of the Banking Principle were thus incomplete, in that they included the assumption that the increase in trade would just offset the increase in money, and that the transactions would lead to repayment of the debts and retirement of the money, they nevertheless pointed to the problem of bank credit and prices. Banking students for many years have opposed the extension of long-term loans by commercial banks because of the realization that such loans increased the volume of bank notes or bank deposits without correspondingly increasing the volume of goods and services to be bought with the additional money. Many of the early

critics of banks in this country argued that banks would be much less pernicious if they confined their activities to the discounting of promissory notes or bills of exchange which arise from actual commercial transactions. The National Banking System reflected to a considerable extent the arguments of this school. Bank loans, however, may still be excessive even when they are short-term and self-liquidating. The degree of inflation depends upon the length of the loans on the one hand and the period of production and the income velocity of money on the other.

The Banking Principle and the Federal Reserve

It will suffice here merely to mention the influence of the Banking Principle on the development of the Federal Reserve System. The reader may wish to review the earlier chapters to illustrate this influence. The general opinion at the time of its founding in 1913 was that the system would insure that the banks would serve the needs of business. In other words, it was designed to favor self-liquidating commercial loans and discourage speculative and long-term loans. The collateral requirements for Federal reserve notes are an illustration, as well as the eligibility requirements for rediscounting. During World War I, favorable treatment was accorded "war paper," the promissory notes of those who borrowed to buy Liberty Bonds and secured their notes with the bonds. In the famous policy statement of 1923, the Board announced its interest in the provision of credit for business purposes, with the theory that the volume of credit was correct so long as goods were moving through the processes of production and distribution in an even flow. During the years following this announcement new developments took place, primarily an increase in investments which made the Commercial Loan Theory (as the Banking Principle is sometimes called) more and more difficult to apply. The depression period of the early 1930's was accompanied by great demands for currency for hoarding, which led to almost complete abandonment of the eligibility theory of rediscounting. Any "acceptable" paper could serve as security for reserve bank loans to members, and in addition the reserve banks could use government bonds as collateral for their reserve notes. In 1935 and 1945 these provisions, respectively, were made permanent. Hence, by the latter date,

as a result of the experiences of the intervening years since the establishment of the reserve system, much more emphasis was placed on the quantity of money in existence than on the type of loans that had brought that quantity into existence.

XXXIV

INVESTMENT AND INCOME

IN THE DISCUSSION of the national income (Chapter XXX) it was pointed out that the real income of a community is the sum of consumption goods and services plus investment goods produced during a period. In money terms, it is the value of these goods, which in turn is the sum of money expenditures on them. This amount is also the money incomes of the society, which are the sum of expenditures for consumption plus savings. Since individual incomes are generated by the production of these goods and services, and equal to the value of production, total income is also the sum of profits and costs incurred in that production. We are now to extend the analysis of saving and spending to consider their influence on changes in income.

Consumption, Saving, and Investment

If everyone's income were stabilized for a reasonably long period, the public would come to some level of consumption that would be considered appropriate to that income. Unless the income were extremely low there would be a margin of saving left over by this consumption. This margin is the amount of income that is not spent for current production of consumer goods. It therefore measures the amount of investment there must be if production and incomes are to be maintained. Since incomes are generated by production, the only way in which they may be maintained, in case all the income of a

period is not spent on consumers' goods, is that the difference be spent for investment goods. Then total production is sold for the same total incomes as in the preceding period.

To illustrate, suppose that income is 100 in a given period, and that people consume 80. Since the other 20 is not available to the public as income again unless it is spent for investment goods, income would fall to 80 unless investment takes place. In other words, if all income is spent either for consumers' or producers' goods during a period, exactly that same income becomes incomes again for the next period. If we define equilibrium consumption as the consumption that will take place at a certain income, then it follows that there is an "appropriate" or unique amount of investment that will just maintain that income. This investment, of course, is equal to what we might similarly call the equilibrium amount of saving.

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving</i>	<i>Investment</i>
Original	100	80	20	20
1	100	80	20	20
2	100	80	20	20

We may turn the above sentences around a bit and say them somewhat differently. Since income equals consumption plus investment, we may also say that a given level of investment is associated with a given income. Let us compare these figures:

<i>Income</i>	<i>Consumption</i>	<i>Investment</i>
60	60	0
100	80	20

In the first instance we assume a "low" income of 60 which is completely consumed by the community. All production is for consumption, that is, consumer goods. This is not to say that no capital goods are made, but that they just replace the wear and tear on old equipment. Equipment is thus the same at the end of a period as at the beginning, so there is no net investment.¹ This situation could persist; it may be an equilibrium situation. People may continue to turn out 60 (say \$60 billion worth) of consumption goods, buy them for 60 and thus earn 60 as costs (wages, rents, salaries, etc.) or profits, period after period.

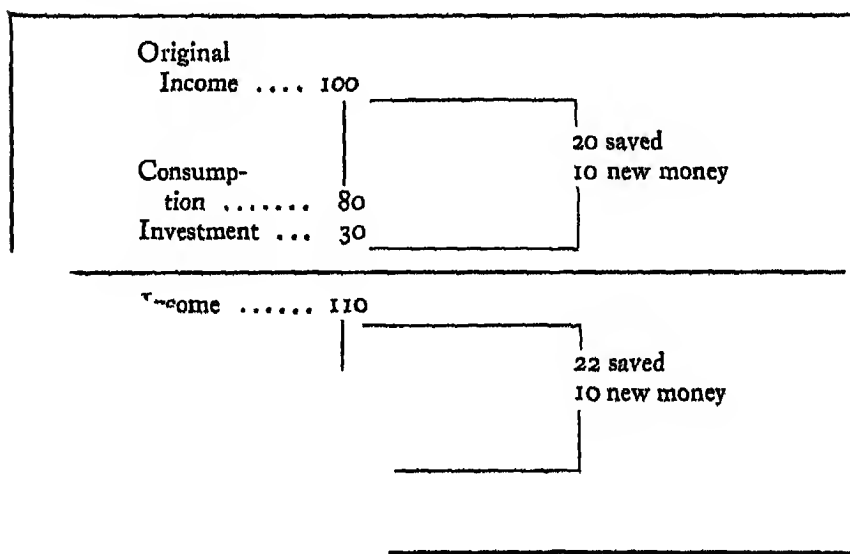
¹ Investment is sometimes defined to include replacement, sometimes to exclude it. ~~Here,~~ the latter is adopted.

Similarly, the second situation may be stable. The economy may produce \$80 billion worth of consumer goods and \$20 billion of equipment, earn \$100 billion in the process, and buy the same goods. If then, at a 100 income, the equilibrium consumption is 80, the maintenance of income depends upon an investment of 20. Given an equilibrium consumption, each level of investment will produce an appropriate income. If investment were 30 in the above table, people would receive incomes of 110 in the production of total output of that amount; similarly, if it were only 10, income would fall to 90.

Increase in Investment

Let us examine what would happen if we start with incomes of 100, consumption of 80% of income, and investment amounting to 30, and if in each period we have investment exceed saving by 10. This is illustrated in the following figures:

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving</i>	<i>Investment</i>
Original	100	80	20	30
1	110	88	22	32
2	120	96	24	34
3	130	104	26	36
4	140	112	28	38
etc.				



Production during the ensuing period, which we define as a period of time long enough for the disposal of income, will be 110, creating an income of that amount. If we continue the analysis with the assumption that (1) the equilibrium consumption is 80% of income and that investment exceeds saving by 10 in each period, then the income of the next period will always rise by 10 and, of course, consumption will rise by 8 and saving by 2.²

Sources of Investment Funds

An obvious question arises at this point, namely, if income is 100 and the public saves 20, how can investment be 30? If there is 100 to be spent, and 80 is spent for consumption goods, how can 30 be spent for capital goods? These funds may come from two sources. As we have seen in previous chapters, the banks can extend loans in the form of new money, so that additional investment may take place. If the volume of money (M) is increased by lending or purchase of securities by the banks, and people do not restrict their expenditure for consumption, there is more money to be spent. In the second place, people may spend or invest hoards accumulated in previous periods. It was concluded in the preceding chapter, it will be recalled, that, if the banks do not just offset changes in savings, loan contraction or expansion will alter the price level, and as we may now see more clearly, the volume of total production.

Rate of Investment

In the example above, we assumed that investment increased by 10 in each period. This assumption was made simply to illustrate how income would increase by 10 also if consumption stayed at 80% and saving at 20% of income. We now wish to note what would happen if investment simply rises from one level to another; that is, if the rate per period is higher than it was. For the moment we will leave saving at 20% each period, and suppose that the rate of investment rises to a new level of 30.

Under this set of circumstances, the increased income flowing from the higher rate of investment would lead to a greater volume

² The concept of a "period" is simply a device for analysing the problem. Actually, there are no "breaks" where one can say such a period just ended and another begins. It is nevertheless a useful concept for approaching the problem. See D. H. Robertson, "Saving and Hoarding," *Economic Journal*, Sept, 1933.

of savings from period to period, and hence the greater investment would be financed by less and less new money and add to income less and less rapidly. Income would increase from period to period but at a slower and slower rate. Eventually, income would reach a level (150) where, if 20% of it is saved, saving just equals investment again. The 50% increase in investment thus has eventually resulted in a 50% larger income at a new equilibrium level where investment and saving are equal. Investment of 30 during the last period just suffices to maintain incomes because without it some income would not be spent on current output. As it was stated above, the new level of investment requires or brings about a new level of income.

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving</i>	<i>Investment</i>	<i>New Money or Dishoarding</i>
Original	100	80	20	30	10
1	110	88	22	30	8
2	118	94.40	23.60	30	6.40
3	124.40	99.52	24.88	30	5.12
4	129.52	103.62	25.90	30	4.10
5	133.62	106.90	26.72	30	3.28
:	:	:	:	:	:
:	:	:	:	:	:
?	150.00	120.00	30.00	30	....

Propensity to Consume

In the foregoing examples we have been illustrating one thing at a time. The next assumption to examine is that in the last example consumption remains at 80% and saving at 20% of income as income rises by 50%. Most likely, this would not happen. People with increasing incomes usually do not spend all of the additional money unless they are so poor that even with the increase they feel that they must consume their entire incomes. The "propensity to consume" refers to the proportion of income that people would consume at different income levels. The *marginal* propensity to consume is the proportion of an *increase* in income that would be consumed.

It is apparent that the public's propensity to consume depends a good deal upon the distribution of individual incomes. At an individual income of \$1,000 per year, consumption is usually 100%, or even greater. At \$100,000 per year a person could very easily save, and

at \$1,000,000 per year he might have considerable trouble in consuming the entire amount. Along the same lines, we might guess that if these three incomes were increased by 10%, we would find the following:

<i>Increase in Income</i>	<i>Increase in Consumption</i>	<i>Increase in Saving</i>
\$ 100	\$ 100	\$ 0
10,000	5,000	5,000
100,000	0	100,000

Therefore, when incomes rise in total as a result of the fact that investment outruns previous monetary saving, it makes a considerable difference who gets the increased incomes and in what proportions. The more the incomes go to low-income groups in greater employment, the more we should expect consumption to rise.

Many statistical studies have been made of family budgets and other measures of consumption and saving. One that will serve our purposes to illustrate the relation of consumption to size of income is shown below in Table 81. In this table family incomes are grouped

TABLE 81

UTILIZATION OF AGGREGATE INCOME BY FAMILIES,
1929

Decile	Income	Aggregate Amounts (billions of dollars)		Percentages	
		Consumption	Saving	Consumption	Saving
1	\$4600 & over	21.6	13.0	62.4	37.6
2	3,100-4,600	8.5	1.8	82.5	17.5
3	2,450-3,100	6.7	1.0	87.0	13.0
4	2,000-2,450	5.7	0.7	89.0	11.0
5	1,700-2,000	4.4	0.4	91.7	8.3
6	1,450-1,700	4.0	0.2	95.2	4.8
7	1,250-1,450	3.5	0.1	97.2	2.8
8	950-1,250	3.0	0.0	100.0	0.0
9	600- 950	2.3	— 0.1	105.0	— 5.0
10	under \$600	1.3	— 0.4	144.4	—44.4
Total		61.9	16.9	78.7	21.3

Source: Maurice Leven, Harold G. Moulton and Clark Warburton, *America's Capacity to Consume*, Brookings Institution. Review of Reviews Corp., New York, 1934, p. 262, as changed slightly in pamphlet summarizing *Report of the Maurice and Laura Falk Foundation for 1933-1934*.

in deciles, or tenths; the first decile includes the 10% of the families with the largest incomes, and so on.

These estimates show that the richest tenth of the families in 1929 saved over a third of their incomes and the next richest tenth saved 17.5% while the eighth richest tenth saved nothing as a group and the poorest groups consumed more than their incomes, through gifts

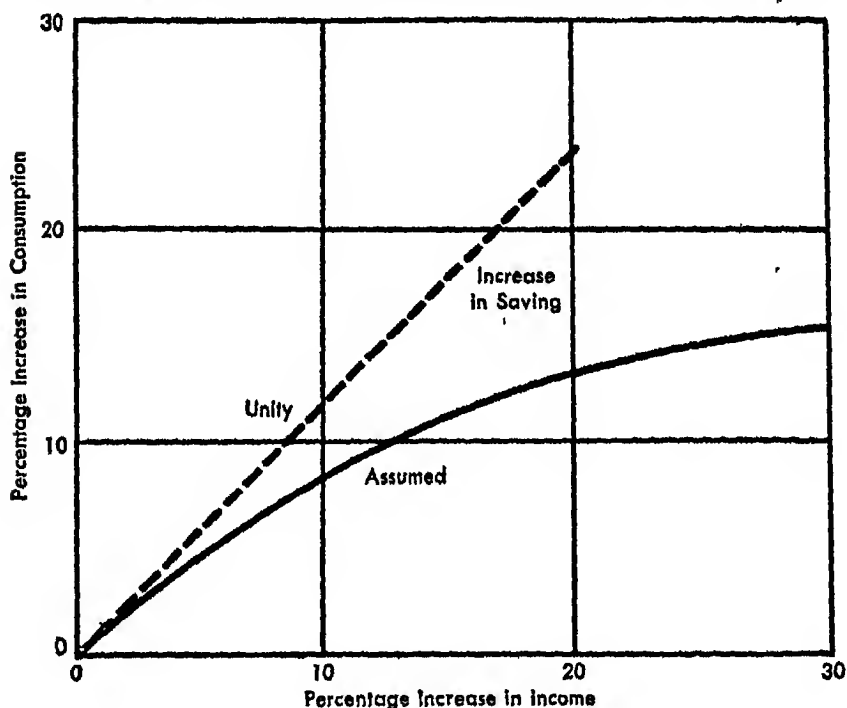


FIG. 30.—Hypothetical Propensity to Consume.

and loans. Other figures in the same study indicate that those in the \$10,000–\$11,999 group saved 32%, while those in the \$100,000–\$199,999 group saved 48%. Thus we are given some clue as to what proportion of income would have been consumed if incomes had risen. Presumably, the \$3,100–\$4,600 people would have saved over a third of their incomes if those incomes had risen to the distribution of the top decile, and so on. Thus, the proportion of the *added* income that was saved would have been relatively high.

The statistics on the national income during the war illustrate (with reservations) the differences in increases in income, consump-

tion, and savings. While there was an approximate doubling of disposable income between 1937 and 1944, consumption rose about a third and saving about six times. Of course, if people had been free to spend on consumer items that were rationed or not produced, and if producers had been free to make them, the public would no doubt have saved much less and consumed much more. However, it is an observable fact that in general an increase in income results in more savings as well as more consumption, and further, that the proportion of total income saved tends to rise. Therefore, we should now correct the preceding tables to take account of this fact, and assume that as income rises there will be an increasing rate of saving. Each time that income becomes greater, the recipients will save not only a greater amount, but a larger percentage of their incomes. Hence, the equilibrium between savings and investment will be reached more quickly.

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving Amount</i>	<i>%</i>	<i>Invest- ment</i>	<i>New Money or Dishoarding</i>
Original	100	80	20	20	30	10
1	110	86.90	23.10	21	30	6.90
2	116.90	90.60	26.30	22.5	30	3.70
3	120.60	91.05	29.55	24.5	30	.45

These figures bring us out at a virtual equilibrium during the third period, when savings have risen to 29.55 and become practically as large as investment. Incomes have risen to 120.60 and can rise very little more (in the absence of a new stimulant) because of the impending equilibrium between saving and investment. The original increase in the rate of investment to 30 per period will therefore lift incomes and consumption a limited amount as a result of the tendency towards an increase in savings. In other words, while incomes have gone up about 20%, the public has been enabled to increase its savings by about 50%, a fact which in turn accounts for the smaller increase in income.

These relationships may be seen more clearly if attention is focused upon what happens, in these hypothetical figures, to the increments of income. The marginal propensity to consume, it will be seen, rapidly weakens as income rises, and the proportion of the additional income available for saving grows with proportionate rapidity.

Period	Income Added	Consumed		Saved	
		Amount	%	Amount	%
1	10	6.90	69.0	3.10	31.0
2	6.90	3.70	53.6	3.20	46.4
3	3.70	.45	12.1	3.25	87.9

Decreases in Income

From the principles described above, it follows that a disequilibrium in which investment is smaller than savings will be followed by results in the opposite direction; that is, income will tend to fall until a new equilibrium is established again, either through increasing investment or diminishing savings. Whenever monetary incomes fail to be spent for something, either consumption or investment, they fail to reach the hands of others; aggregate income must therefore decline and so does current production because of the attendant lack of buying.

In the same way as the marginal propensity to consume operates to restrict the rise in income under investment stimulation, it operates to restrict the fall in income under opposite circumstances. As incomes decline the public tends to spend a larger and larger fraction for consumption goods and to save a smaller and smaller fraction. Hence, as above, the equilibrium between savings and investment is restored so much the sooner.

The analysis of the effects of changes in saving and investment has stemmed in recent years largely from the work of J. M. Keynes, first in his *Treatise on Money* and later in *The General Theory of Employment, Interest and Money*. On the point we have just covered Keynes concluded,

An increase (or decrease) in the rate of investment will carry with it an increase (or decrease) in the rate of consumption; because the behavior of the public is, in general, of such a character that they are only willing to widen (or narrow) the gap between their income and their consumption if their income is being increased (or diminished). That is to say, changes in the rate of consumption are, in general, in the same direction (although smaller in amount) as changes in the rate of income. The relation between the increment of consumption which has to accompany a given increment of saving is given by the marginal propensity to consume.³

³ J. M. Keynes, *The General Theory of Employment, Interest and Money*, New York, Harcourt, Brace & Co., 1936, p. 248.

The Investment Multiplier

It follows from the discussion above that there must be a relationship between a given increase in investment, or decrease, and the change to be expected in total incomes. What determines whether a 10% increase in the rate of investment will increase incomes by 5%, 6%, or some other ratio? The answer lies in the marginal propensity to consume, or, if we look at it in another way, what is called the investment multiplier. Suppose, first, that we assume a given increase in income to be entirely saved; that no increase in consumption takes place. Then, if investment should rise income would increase only by the amount of the new investment, as follows:

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving</i>	<i>Investment</i>
Original	100	80	20	30
1	110	80	30	30
2	110	80	30	30

The reason for the small increase in income is obvious because as soon as income is received and disposed of (one period) savings and investment are equal; in other words, the added income is saved as fast as it is received.

Relation to Propensity to Consume

Suppose, on the other hand, that the marginal propensity to consume is one-half, so that one-half of an increase in income is consumed. Then we will have:

<i>Period</i>	<i>Income</i>	<i>Consumption</i>	<i>Saving</i>	<i>Investment</i>
Original	100	80	20	30
1	110	85	25	30
2	115	87.50	27.50	30
3	117.50	88.75	28.75	30
4	118.75	89.37	29.37	30
:	:	:	:	:
:	:	:	:	:
?	120.00	90.00	30.00	30

In each period, income rises by an amount equal to the excess of investment over saving of the previous period. The original excess of 10 adds that 10 to income, but as half of the new income is saved, investment, if it remains at 30, adds only 5 to income in the next

period, and so forth. Thus we have a series of additions to income like this:

$$10 + 5 + 2.50 + 1.25 \dots\dots\dots = 20.$$

This is similar to an infinite series like:

$$1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} \dots\dots\dots = 2.$$

As half as much is added each time, the limit approached by the series is twice the original addition.

In this particular example, in which the marginal propensity to consume is assumed to be $\frac{1}{2}$, the amounts added to savings would rise equally with those added to consumption, that is, by $5 + 2.50 + 1.25$, and so on.

From these relationships we see that if the marginal propensity to consume is $\frac{1}{2}$, then the increase in income is twice as much as the increase in investment. The investment multiplier, therefore, is 2. These two quantities must always be related to each other in this manner. If the marginal propensity to consume is $\frac{1}{10}$, then the investment multiplier is 10; income will rise by 10 times the increase in investment. In such a case we would have a series of additions to income from period to period like this:

$$10 + 9.00 + 8.10 + 7.29 + 6.56 \dots\dots\dots = 100.$$

Or, we may say that when all of the added income is saved income rises by the amount of additional investment, and hence the *additional* increase, when the marginal propensity to consume is greater than zero, is determined by the multiplier. In other words, taking the total increase as 1, the increase in investment accounts for $\frac{1}{10}$ th of the increase in the above example and the investment multiplier accounts for $\frac{9}{10}$ ths.

Thus, if we use the symbol k for the multiplier,

$$k = \frac{1}{\text{marginal propensity to save}}$$

(= $1/\frac{1}{10} = 10$ in this example), and what we have just said is that

$$1 - \frac{1}{k} = \text{marginal propensity to consume (in this example, } 1 - \frac{1}{10} = \frac{9}{10}\text{).}^4$$

⁴To help illustrate these relationships it is suggested the reader work out the figures that would result in the last table above if the marginal propensity to consume were $\frac{2}{3}$ and the marginal propensity to save accordingly $\frac{1}{3}$; this will help show why the multiplier in such a case will be 3.

Why Investment Stimulates Incomes: Equality of Savings and Investment

Keynes' contribution to economic thought lies largely in his analysis of saving and investment and their relationship to income. In his earlier work, and in that of many other writers, emphasis was placed upon discrepancies between savings and investment, as has been done above. In the *General Theory*, Keynes emphasized the necessary equality in real terms between the two. It may be observed that all of the examples used above showed that a disequilibrium exists until saving and investment are equal. This is the essence of the whole analysis. The question then arises, why must they be equal? It is probably plain enough that income keeps rising as long as the rate of investment is greater than the rate of saving and, secondly, that the rate of saving rises and eventually equals the rate of investment, owing to the marginal propensity to consume.

However, there is another sense in which investment and saving must be—that is, *are*—equal. This follows from the nature of income. For instance: ⁵

1. Income = value of output = consumption plus investment.
2. Income — consumption = saving.
3. Income — consumption = investment.
4. Therefore: saving = investment.

Then, how have we been able to show disparities between them in the preceding discussion? Simply by the device of the "periods" used. We had the consumption plus investment of one period equal the income of the next. This made it possible to show that if money income were not spent on consumption it would reduce income, unless it were spent for investment, and that still more investment would raise income.

Accordingly, we must blend this device into the concept of equality outlined above. This "blending" involves the realization that any act of investment requires an act of saving and vice versa. If a person buys an earning asset he cannot spend the same income for consumption. If bank loans permit additional investments, incomes are automatically increased and savings, in the usual sense of the word, are increased also. Someone must at all times have the new money.

⁵ *General Theory*, page 63.

Until a borrower has spent his new money, investment has not taken place. As he does acquire capital goods one of two things happens: (1) new capital goods are produced for him and incomes are received equal to the expenditure on investment; or (2) old capital goods are transferred to him. In the second case, no new investment has taken place and no new incomes created, as the previous owners have merely exchanged one asset for another (cash). In the first case, the new incomes are necessarily saved, by definition, until they are spent. This may be, for some of the income receivers, a short period, but the fact of their saving remains. When the incomes are spent, they again add to the cash balances of others and are savings until and unless they are spent. Hence, saving automatically increases as investment does, even if additional investment is made possible by new money.

On the other side, how does an increase in savings become matched by an increase in investment? An increase in the savings of only a part of a community would so reduce incomes that the remainder, if they should keep their consumption at the same level, would be obliged to reduce their savings, and total savings therefore might not increase. If the total savings of the community do increase, the goods which are ready for consumption are not bought; they pile up, thus adding to the investment of their holders—storekeepers and others. This involuntary investment is brought about by a rise in inventories resulting from an unexpected decline in consumption. Thus an increase in savings will cause either (1) goods to be sold for lower prices, with a reduction in the incomes of the sellers, or (2) goods to be piled up as increased investment. Incomes must decline unless new investment matches the new saving.

Aggregate Demand

Most of the discussion in this chapter has related to the aggregate demand for goods. Until fairly recent business cycle discussions, most economic analysis dealt with the supply-demand relationships of individual categories of goods. The very real economic problem of severe depressions and their accompanying unemployment served to shift attention from the study of the relative values of specific goods in comparison to all other goods to the study of aggregate supplies of all goods in relation to the aggregate demand for all goods. While

prices generally were considered to be expressions of relative values, the height of the price level was a relatively unimportant problem. As we said in the first chapter, arrows could be worth one fishhook each and canoes five, or their respective prices could be twenty and a hundred. The latter pair of prices indicated merely that the value of money itself was low.

As is apparent in the preceding sections of this chapter, however, the use of money has brought about a serious problem of the effect of such use on the production of goods. Early writers, like Adam Smith, pointed out that money is like roads; it is a convenience. Money permits trading to take place much more rapidly and conveniently, because it serves as a measure of values and as a medium of exchange. John Stuart Mill claimed that the difference between a country with money and a country without it is merely one of convenience, such as if grain in one country is ground by water and in another by hand.⁶ These writers overlooked the disruptions brought about by changes in the rate of spending; that is to say, changes in saving, hoarding, and investment. That changes in these factors have repercussions on the volume of employment and on production and incomes follows from the elementary examples used in this chapter.

The manner in which this type of problem has been merging the rather specialized field of money and banking with the wider study of economic problems in general is well illustrated by these questions raised by J. M. Clark in 1926:

As for our supposed law of supply and demand . . . What shreds of real meaning can it have in a community where the incessant question is, What percentage of our supply of productive power is standing idle, and what part of our supply of labor is unemployed because the demand for it does not exist? . . . The whole equation of supply and demand reduces itself to an impossible travesty when builders are out of work and cannot buy shoes because there are too many buildings for the demand, shoemakers cannot buy clothes because the demand for shoes is not up to the supply, and clothing workers cannot rent large enough living-quarters because there is an oversupply of clothing; so that as a group they suffer for lack of all these things because too many of them have been

⁶ "That the money prices of all things should rise or fall, provided they all rise or fall equally, is in itself, and apart from existing contracts, of no consequence. . . . Everyone gets more money in the one case and less in the other; but of all that is to be bought with money they get neither more nor less than before. . . . A general rise or a general fall in values is a contradiction; and a general rise or a general fall of prices is merely tantamount to an alteration in the value of money." Mill, *Principles of Political Economy*, pp. 439-440 (Ashley edition).

produced. What really exists is a shortage of goods to meet the aggregate needs of those who are willing and able to produce other needed goods in exchange; but through a cumulative series of misfits, all that the business eye can see is an excess of supply over "demand." Some things the law of supply and demand goes far to explain; but the business cycle is a standing proof of its failure to explain some of the most critical factors in the relation of production to consumption.⁷

Stimulating Investment

If the volume of production, and therefore the national income, is decreasing owing to an apparent excess of savings over investment, there are two obvious avenues of approach to a solution for the problem. One is to increase investment and the other is to decrease saving, which means to increase consumption. An increase in either investment or consumption would tend to increase production and incomes.

Generally speaking, writings which have appeared on this subject since 1930 have advocated stimulants to investment. Keynes, for example, examined the deterrents to investment and recommended measures to stimulate it. When it appeared that private investment might not be sufficient to offset the volume of private savings, he then proposed government investment sufficient to restore equilibrium. In Keynes' view, investment is likely to become more and more unprofitable as more and more producers' goods are built. Consequently less investment would take place, under a free-enterprise, profit economy, unless the rate of interest in some manner declined with sufficient rapidity to make worth while the borrowing of funds for investment purposes. The rate of interest cannot decline indefinitely, however, because lenders will not lend their funds for no return at all. Some premium must be paid lenders in order to overcome their "liquidity preference," a preference to hold wealth in liquid forms, of which the most liquid is money itself.

One of the foremost American writers on the problems discussed in this chapter is Professor Hansen, who is well known for his thesis that the American economy has become "mature," in the sense that investment opportunities are no longer adequate to absorb the volume of savings that people wish to make. Like Keynes, Hansen proposes a sufficient volume of investment by the government to prevent de-

⁷ Reprinted by permission from *Social Control of Business* by J. M. Clark, copyrighted, 1926, by the McGraw-Hill Book Company, Inc.

pressions which stem from "over-saving."⁸ The means by which government may stimulate private investment or directly enter the field of public investment are discussed in the next chapter.

Stimulating Consumption

As stated above, an equally obvious remedy for a disequilibrium of saving and investment is a change in consumption. Since we are considering primarily an excess of saving, this would involve an increase in consumption. Various proposals which have been made from time to time to accomplish this purpose also will be examined in the next chapter.

Some writers, however, have argued that consumption cannot be adequate to provide sustained prosperity in a modern capitalist economy. These writers may be grouped, rather approximately, into two schools. The older, stemming back to Marx or earlier, relies on the doctrine that "market gluts" and unemployment are bound to occur because of exploitation of labor. In this view, labor is not paid enough to buy what it produces, since production is sold at prices that include profits. Such a view rather obviously overlooks the fact that profits, being income, can be spent for current production as well as can wages, or rents, royalties, salaries, interest, and other incomes. This doctrine cannot be considered valid when it is remembered that the current money incomes are equal to the value of current production, and hence are just sufficient to take it off the market.

The other view reflects the Keynesian analysis of savings and investment but proceeds to state that uninvested savings are a necessary result of the present economic organization. ". . . The process of saving as we practice it almost necessarily means that some of our money savings are not used in investment, and . . . this is practically inevitable periodically. This . . . is the crux of our difficulty in distributing our product and maintaining employment."⁹

According to Professor Hayes' analysis, this periodic disequilibrium results from the fact that investments result in increased output of consumer goods, which the owners of investments do not buy because of their desire to increase their savings still further. There are

⁸ Among Professor Hansen's numerous writings, see, for example, *Fiscal Policy and Business Cycles*, New York, W. W. Norton and Co., Inc., 1941.

⁹ H. Gordon Hayes, *Spending, Saving, and Employment*, New York, Alfred A. Knopf, 1945, p. 10.

really two problems involved here: (1) the possibility of selling the increased output at pre-existent prices unless there is an increased volume of money, and (2) the "refusal" of investors to consume the increased output. These twin difficulties of selling additional output, after a period of prosperity during which investment has swelled the incomes of those who do consume, and before additional consumption goods have come to market, eventually make investment unprofitable again. "The desire to save prevents the purchase of the consumption goods and services that must be sold if employment is to be maintained." ¹⁰

In terms of the hypothetical examples employed earlier in this chapter, let us start with a national income of 100, with investment at 80 and saving at 20.¹¹ If during this period the production is divided in the proportion of 80 consumption goods and 20 investment goods, all the production is sold and incomes are maintained at 100. But the additional investment goods will result in the production of additional consumer goods in a later period, so that production may be taken as 81 consumption goods and 20 investment goods. In the first place, as noted above, the production now valued at 101 cannot be sold for 100 unless prices are reduced. If this difficulty is surmounted by an addition to the money supply through bank loans made to the owners of the extra production for the purpose of marketing it, there is still the difficulty of whether the incomes of 101 will take production off the market. Most likely the investors, whose incomes rise as a result of interest on their investments, will now wish to save 21. The disposal of money incomes would thus become 80 consumption and 21 saving, while production is 81 consumption and 20 investment goods. The result of this situation will be a fall in the prices of consumer goods, which will make further investment unprofitable. Consequently, it is unlikely that the 21 money units, not spent for consumption goods, will be spent at all. Such an outcome would lead to declining incomes, unemployment, and reduced production.

¹⁰ *Ibid.*, p. 29.

¹¹ Fortunately, Professor Hayes' illustration runs in the same terms as those used previously in this chapter. (*Ibid.*, p. 32.)

XXXV

GOVERNMENT POLICY AND THE PRICE LEVEL

IN CONCLUDING this description of the influence of the use of money on economic welfare, it is appropriate to survey the measures available to augment the beneficial and diminish the restrictive influences of money. These measures may be grouped as those taken to encourage the "proper" use of money by private individuals and business firms and those taken by government directly. The first group embraces what has come to be called monetary policy, while the latter embraces fiscal policy. There is only a hazy line between the two; they are so intertwined and interdependent that one group of measures is seldom effective without the other.

Monetary Policy

There have been monetary policies ever since governments assumed control over standard money. Originally, it may be supposed, the essential policy was to guarantee the integrity of the standard. When a Greek city-state or a medieval prince issued coins the principal purpose was to provide a money of known commodity content and value. Later on, as government-credit and bank-credit money became more and more acceptable, the problem became primarily that

of so regulating the total quantity of money that convertibility into the chosen standard could be assured. In still more recent times monetary policies have arisen in response to fluctuations in price levels and in production and employment. As the problems attacked through monetary policies became more difficult, the principles to be followed in devising proper monetary policies appeared to be more and more complex. We shall be concerned first in this chapter with the development and bases of policies designed to meet problems of economic depressions and unemployment.

Interest Rate Policy

The mention made at several points in preceding chapters to Federal reserve policy has emphasized the importance attached by monetary authorities and the money market to the level of interest rates and to changes in it. "Easy money" and "tight money" have long been the complementary weapons of central banks to achieve their objectives. We are now able to examine more closely the relationship of interest rates to some of the other variables we have been examining, particularly the volume of money, investment, and saving.

The influence of interest rates, or changes in them, may be considered separately with respect to the three variables just mentioned. The rate of interest may be defined as the price of future money. That is, lenders require a premium if they are to part with money today in exchange for debts, which are promises to return the money in the future. Like any other price, the interest rate performs the function of balancing supply and demand. The supply and demand to be considered are those of funds available now in exchange for future repayment.

Low interest rates thus would be expected to increase the volume of loans borrowers would like to have and to decrease the volume of loans lenders would like to make. An easy-money policy, carried out through reductions in the rediscount rate and open-market purchases, has usually been designed to encourage lenders (principally commercial banks) to make loans and invest at existing levels of interest rates because of increasing bank reserves. This increased willingness would in turn tend to lower rates. Low interest rates thus have been thought of as measures to increase the volume of money, through the expansion of bank deposits. Efforts to increase the volume of money

and consequently the volume of spending, production, and employment, therefore, have included reductions in open-market rates brought about through central bank action. The Federal reserve policy of 1930-1935 is an outstanding example.

The volume of money would not increase through bank lending, of course, unless borrowers were willing to increase their borrowings at the reduced interest rates. Consequently, we must also consider the possibilities of investment of the borrowed funds. As interest rates are costs to business borrowers, funds supposedly will not be borrowed for business purposes unless the borrowers expect to earn more from the investments than they pay as interest. Consequently, the rate of investment cannot depend solely upon the level of interest rates, but, to be more exact, it must depend upon the relationship between expected earnings on the one hand and interest costs on the other.

In a given situation, investments of various kinds promise to return much or little in the way of profitable use. When prices are rising, investments in circulating capital (goods for resale) or in fixed capital (to produce other goods for sale) appear attractive, and vice versa. When shoe factories appear adequate to produce all of the shoes likely to be salable at profitable prices, additional investment in shoe factories and machinery is deterred, and so on. In making his individual decision, the entrepreneur must balance his estimate of the probable returns from such an investment against the interest cost that he will incur for borrowed funds. If he contemplates the use of his own funds, he also must consider market rates of interest, since in that event he may lend his funds at interest rather than invest them directly. In either case, the prospective return to capital must exceed the market rate of interest on the particular funds involved.

As a result of these considerations, easy-money policies have been adopted, not only to increase the volume of money as such but as a step in the stimulation of investment. Low interest rates have been considered to be an encouragement and high rates a deterrent to increased business activity. The low rates brought about in the 1930's represented an attempt to restore private investment to a level sufficient to "put people to work" and increase the national income. As these low rates still prevailed at the outbreak of war in 1941, there was considerable worry that they might encourage great expansions

of industries beyond the physical limits of available labor and resources. In such case, the new funds would be used to bid up wages and other costs in a spiral of inflation. As was mentioned in Chapter XXVIII, the requirements of the Treasury presented a dilemma of low rates for Treasury borrowing or high rates for inflation control, a situation similar to that during World War I.

It is also necessary to consider the effect of changes in interest rates on the volume of saving. For many years the interest rate was thought of as primarily the equilibrator between savings and investment. A high rate would increase savings and a low rate would increase investment, and the prevailing rates would tend to balance the two. Chiefly because of this belief, economists long overlooked the relationship of changes in saving to changes in production. They more or less assumed that saving and investment were made equal by the action of the interest rate, and therefore that saving could not reduce production. It follows from the principles outlined in the preceding chapter that saving is a function of income to a greater extent than it is a function of interest rates. When incomes rise or fall, savings correspondingly tend to rise or fall even faster. Thus we are led to a consideration of one of the main difficulties of investment control through monetary policy.

Liquidity Preference

Since interest is the premium paid to those who part with money through lending, it appears that the interest rate can never be as low as zero. In fact, the rate probably cannot be lower than that figure above zero which is required to cover the costs of the making of loans and the ensuing risks. At any time, of course, there are numerous interest rates in the money market, but there seems to be no reason that anyone should part with money for a zero return or less, since doing so would place him in a worse position than if he had done nothing.

In addition to these factors, a position of liquidity always has some attraction. Sometimes the preference for liquid assets may be very low relative to the preference for, let us say, long-term bonds, and again it may be very great. This "liquidity preference" depends to a large extent upon anticipations of the future. In the simplest case, for example, a person who anticipates lower bond prices (higher interest rates) in the future, prefers to hold currently more liquid assets

(perhaps money itself). He would have a high liquidity preference and be reluctant to lend.

In consideration of the Quantity Theory it was brought out that everyone has some demand for a cash balance. These demands are made up of desires for balances to spend between paydays, for unusual bargains, emergencies, and for similar purposes. As Keynes points out,¹ balances are wanted for these "transactions," "security" and "speculative" purposes. When a desire to hold larger balances occurs in a large part of the population very high interest rates may not suffice to attract funds from the holders of idle balances. In other words, hoarding takes place, and savings therefore outrun investment. Hoarding not only deprives investment of funds, but may also make investment in capital goods less attractive because of a decline in the demand for consumers' goods. While the market rates of interest are being pushed up, the prospective earnings of capital are thus pushed down. In such a situation, reductions in interest rates by the central banking authorities not only fail to coax hoarded funds into the loan market, but also fail to entice prospective borrowers to seek new funds. Therefore, monetary policy turns to some method of increasing the volume of money, which people wish to hold, in order that the volume of spending will not be reduced.

If people could produce more money when they want more, as is true in the case of nearly everything else, they would produce the increased volume they want to hoard (if not by their own efforts, through those of the producers of money), and interest rates would not be raised indefinitely by the desire for liquidity. During the hoarding wave of 1931-1932, for example, very few holders of cash or bank balances wanted to exchange their funds for business debts, but insisted on holding their money. There was very little circulation of money, very little spending, and market demands for all sorts of commodities virtually disappeared.

Unemployment develops, that is to say, because people want the moon;—men cannot be employed when the object of desire (*i.e.* money) is something which cannot be produced and the demand for which cannot be readily choked off. There is no remedy but to persuade the public that green cheese is practically the same thing and to have a green cheese factory (*i.e.* a central bank) under public control.²

¹ J. M. Keynes, *The General Theory of Employment, Interest and Money*, New York, Harcourt, Brace and Company, Inc., Chapter 13.

² *Ibid.*, p. 235.

In less picturesque language, what is required is a mechanism that will provide bank reserves so that loans will be forthcoming at pre-existent rates of interest, without the rising rates brought about by hoarding, and consumer incomes and spending will be maintained. This is the crux of the opposition to the gold standard; namely, that when gold reserves of the central bank are inadequate this unlimited supplying of the demands to hold money cannot be met, with repercussions on production and employment.

International Monetary Policy

The essential characteristics of monetary policy as it relates to international trade have been touched upon in preceding chapters. The problem, which is mentioned here merely to fill in the picture of over-all monetary policies, is essentially that of the gold standard *versus* free exchange rates, as well as that of the manipulation of exchange rates for the purpose of affecting domestic trade.

Clearly, when the monetary policy of a country is devoted to the maintenance of the gold standard, that country faces not only the problem of the provision of sufficient supplies of money to finance consumption and investment but also that of the gain or loss of gold through international trade. The domestic situation may be greatly complicated if economic conditions call for an expansion in the volume of money while the gold stock is diminishing. This is the situation when a country is trying to maintain a relatively high price level and a high level of employment, especially if that high price level has resulted in increased imports of commodities and loss of gold through fixed exchange rates. The problem can become still more complicated, as it did in 1931-1933, if gold movements result from the shifting of short-term balances from money center to money center in response to anticipated changes in monetary standards.

Many countries during the 1930's abandoned the gold standard in order to free their money supplies from the restrictions of gold reserves and the capricious changes in those reserves resulting from gold movements.⁸ Such abandonment of the gold standard was a defensive measure in some instances, which was required after other

⁸ It should perhaps be repeated that such gold movements were capricious because of the movements of large fluid short-term balances, whereas gold movements prior to World War I resulted mainly from trade and capital transactions; that is, in response to price-level and interest-rate factors.

countries had already abandoned gold or reduced the gold values of their currencies. A country still on gold in this situation imported a great deal and exported little, as a result of the high international value of its money. The imports competed with domestic industry; the declining exports depressed export industries; and at the same time the loss of gold reserves led to tight-money conditions and still further depressing effects. Under these circumstances, even the firmest believers in the benefits of international trade could not afford to allow their foreign trade to continue unaltered. Generally the reaction took two steps: first there were measures to reduce imports (tariffs, quotas, and the like) and increase exports (subsidies and similar measures), all to protect the gold reserves; and, secondly, there was the decision that the gold standard was not worth saving in this way, and the old gold values were abandoned.

A country which is abandoning gold may allow its money to "seek its own level" in international markets or purposely may establish an undervalued monetary unit. In the latter case, the abandonment of gold is not merely defensive but offensive. The undervalued unit makes export goods cheap to foreigners and imports expensive to residents of the country. The result is at least a temporary stimulus to both export industries and other domestic industries competing with imports. At the same time, gold tends to come to the country, so that, if the money system is still tied to gold reserves, the easy-money situation is easier to maintain.

Fiscal Policy

Fiscal policy is the policy of government with respect to its own expenditures and revenues. Government is comparable to any other unit in the economic system: it receives money from others with one hand and turns over money to others with the other. Like an individual or a corporation, a government sometimes takes in more money than it pays out over a period of time, or it goes into debt when the opposite is the case.

A Balanced Budget

When government takes from taxpayers an amount equivalent to its expenditures its budget is "in balance." Government provides various services, which, in a democracy, the citizens presumably choose

to provide for themselves in this manner. Some types of services have traditionally been considered "proper" government functions, such as the provision of school houses, postal service, and protection against invasion. All of these services, and others, could be provided by the individual citizen for himself or through private enterprise, but the advantage of communal provision has been sufficiently obvious that they have been placed under government operation.

The provision of government service is not different in any important respect from the provision of a private service or commodity, as far as the effect on employment and the national income is concerned. When government sells postal services it takes out of other people's incomes the "sales value" of the services and pays out into the income stream an equivalent amount as costs of operation.⁴ Similarly, when government provides education, it dips tax funds out of the public's income but pours back an equal amount as salaries and other costs.

When the government budget is balanced, therefore, there is no necessary increase or decrease in the total volume of production.⁵ Taxes are no more a "burden" than are the prices of bread and shoes, as long as there is a *quid pro quo*. If, in the absence of taxes, the former taxpayers should spend their incomes on consumption or investment, the only change would be that their expenditures would be channeled differently. Consequently, different things are produced and relative prices are probably affected, but the aggregate demand for goods and services and the total volume of employment to meet the demand is not affected. Resources may be turned to the production of highways, battleships, schools, or parks, and away from the production of clothes, houses, or automobiles, but the total amount spent remains the same.

As a matter of fact, however, it is not necessarily true that the taxpayers' incomes would have been spent or invested, at least with equal rapidity, and to whatever extent this is the case government spending of the tax receipts is expansionary. The more the revenue of government comes from progressive taxation, like the income tax, the greater is the likelihood that funds which would have been saved are spent, and the more the government takes from low-income groups,

⁴ The principle is the same if some of what government receives is taxes to cover a deficit in the postal service.

⁵ Government is here taken to include local, state, and Federal governments.

as through sales taxes, the less is the likelihood that the funds would have been saved. Consequently, we cannot dismiss the balanced budget as being completely without significance. The effects of a budget balanced at \$4,000,000,000, as was the case before 1930, and the effects of a budget balanced at \$25,000,000,000, a probable post-war situation, must necessarily be quite different. To repeat, the effects would differ only in the allocation of resources to different types of production, except insofar as the larger budget soaks up savings (which might not be invested) and spends them.

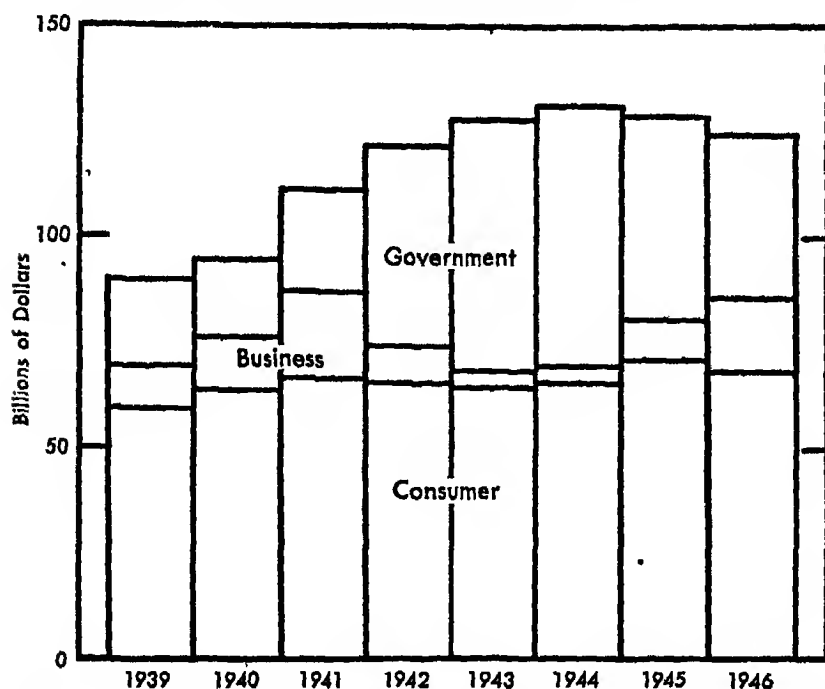


FIG. 51.—Total Expenditure in the United States, 1939–1946, Converted to 1939 Dollars. (Based on Department of Commerce data; 1946 computed from figures for the first half of the year.)

An Unbalanced Budget

Government stands in a strategic position to increase or decrease the volume of total spending, because it can operate both through revenues and expenditures. It can increase private spending by a reduction in taxes or reduce private spending by an increase in taxes.

At the same time, it can spend public funds or refrain from spending them. Even further, government can obtain new funds by borrowing from the banks in order to add to the total volume of spending, or, on the other hand, it can take tax revenues from the public and retire its debt held by the banks.

When government borrows and spends new money, the public holds more money—demand deposits or currency. The money given the government by banks in exchange for bonds is not taken from any one, as taxes are, and when such money is spent by government it adds to the cash balances of individuals and business firms. Similarly, when taxes are paid bank balances shift to government ownership, and if government then uses these balances to retire bonds held by the banking system, the balances are destroyed along with the government debt. Hence, government is in a position to influence the spending of existing money and also to change the volume of existing money.

Government Investment

Owing to the difficulties described above, government, in periods of business depression, may find it impossible to stimulate private investment sufficiently to overcome saving through manipulation of interest rates and the volume of money. It may then decide to make its own investments directly. The activities of the New Deal government in this direction during the 1930's came to be known as "priming the pump." According to this theory, if government gave money incomes a fillip through the expenditure of new money, the responding would continue to add to incomes, increase consumption, increase production, and improve investment outlooks.

The success of such a program, it was discovered, depends a good deal upon the "leakages" that may take place while the new incomes are being spent. The effect of the investment multiplier, described in the preceding chapter, depends upon whether the new incomes brought about by government investment actually will be spent, or whether they will tend to "stick" in the first balances they come to, or be used to repay bank loans.⁶ If new income paid out by government goes to low-income groups who promptly spend it, and if the next recipients also promptly spend it, and so on, the rise in the national

⁶ A thorough discussion of this problem appears in J. M. Clark, *The Economics of Planning Public Works*, Washington, Government Printing Office, 1935.

income stemming from a given amount of government spending will be appreciable. The more the money circulates, however, the more it becomes absorbed in the regular balances already in existence, and the more it takes on the same velocity of circulation as existing money.

In the terminology previously used, leakages creep in as a result of an increase in saving, not offset by increased investment. If store-keepers merely hold increased balances instead of passing them along in order to replenish their inventories, the size of the multiplier is reduced. If the business community expects the government's program of spending to be successful, businessmen then try to replenish their inventories promptly, and in so doing they help make the program successful. If they doubt the probable success of such measures, or if general uncertainty leads to greater liquidity preference, holding the new money idle may defeat the program.

Government spending during the war was, of course, a magnified example of this type of problem. Naturally, the vast increase in spending and the rise in the government debt were not designed as recovery measures, but the fact that everyone knew that government would spend whatever proved necessary to obtain the tools of war led to the conviction that incomes would be high and prices inflated. Hence there was no tendency on the part of business or consumers to "wait and see." During the depression this conviction was lacking. Government spending then was a relatively untried device, many were opposed to it, and many failed to understand it. As a result a large part of the government's additional spending doubtless was offset by reduced expenditures elsewhere. The war proved, if proof was needed, that government spending, if employed on a wide enough scale, can bring about full employment. It need hardly be argued that government spending on a scale of \$100,000,000,000 a year would have brought about a similar recovery in 1931. One of the outstanding paradoxes of the economic system is that adequate markets exist during wars for all the production that can be carried on, and that production responds so completely that a country not actually overrun by the enemy may enjoy prosperity and consumption greater than any experienced in peace time—all in addition to gigantic production of war goods.

The rather startling figures for expenditures by different economic units during the war period illustrate the relationship of government

debt to the expenditures and debt of others. It was estimated by the Treasury that approximately a trillion dollars (\$987,000,000,000) was spent in the United States during the period 1940-1945. The Federal government spent \$365,000,000,000; state and local governments, \$50,000,000,000; and individuals and corporations, \$572,000,000,000. The private expenditures were divided \$517,000,000,000 for consumption goods and \$55,000,000,000 for producers' goods. The Federal government increased its debt during this period by \$209,000,000,000. This increase brought about increased holdings of the debt by others or increases in their holdings of money. Consequently, we find that state and local governments had revenues exceeding expenditures by \$8,000,000,000 and individuals and corporations gained the other \$201,000,000,000. This was the phenomenon alluded to in Chapter XXVIII as the great increase in savings during the war.

Compensatory Spending

Reference has been made above to the concept of a "mature" economy, as described by Professor Hansen and others, in which investment opportunities are thought to be limited sufficiently to create a continuous threat that savings will outrun investment, with a continuous tendency towards unemployment. It is perhaps unnecessary to say that considerable academic controversy prevails concerning the merits of this thesis, and that in a text of this nature we can only point out the nature of the problem. To some writers, as mentioned at the end of the last chapter, the solution appears to be more investment by government as a continuous program, extending the pump-priming of the 1930's to "compensatory spending." To others, the lack of investment opportunities is not merely a reflection of the maturity of the economy, but of the nature of the money system and interest.⁷ To still others the whole problem is a mirage, since in their eyes there is more opportunity for profitable investment today than ever before, as a result of inventions and similar developments.⁸

⁷ For example, Professor Hayes, *op. cit.*

⁸ George Terborgh, *The Bogey of Economic Maturity*, Chicago, Machinery and Allied Products Institute, 1945. For a criticism of this book and a defense of the Hansen thesis, see Benjamin Higgins, "The Doctrine of Economic Maturity," *American Economic Review*, June, 1945, p. 133.

According to the maturity doctrine, there were vast opportunities for investment during the opening up of this country, in railroads, farms, factories, cities, and in fact in all sorts of investments. Even here, it is pointed out, government spending made possible one new wave of investment prosperity after another. The subsidization of the railroads, through gifts of land and other devices, made possible their construction at a time when no adequate market was assured for their services. The coming of the railroads made possible the growth of new towns, new construction, and new industries. Similarly, during the 1920's the extensive construction of highways with government funds (often with borrowed money) provided adequate investment to maintain incomes, and at the same time made possible considerable private investment in the automobile industry, in service stations, and in the petroleum industry, all of which had repercussions in contributory industries like steel, rubber, and textiles.

It should be noted that we are not here discussing so-called "business-cycle" theory. The arguments put forth by Professor Hansen and others are to the effect that there is a secular tendency to less-than-full employment as a result of several factors keeping investment below saving. For still other reasons, business activity fluctuates cyclically. Government spending may be called upon to offset the cyclical fluctuations or, as expounded in more recent literature, to raise the level about which fluctuations take place. Professor Higgins lists the factors depressing investment as the declining rate of population growth, the disappearance of the frontier, and the tendency that modern inventions are becoming more capital-saving than capital-requiring.⁹

Another factor catching attention is the increase in the proportion of services in the total national income of a modern industrial society. Poor societies, with little capital, devote a large proportion of their labor to production of physical goods, like food, while rich societies devote more and more resources to the production of services. This fact leads Professor Hansen to observe,

I do not think it is possible for an advanced industrial country to utilize its extraordinary productive resources without a very large volume of public expenditures. . . . A high production economy . . . is one in which an increas-

⁹ *Ibid.*

ingly large part of the product is in the form of services of one sort or another. These services, in a large measure, cannot be supplied, except by government, by community action.¹⁰

This factor alone would not require an unbalanced budget, but simply a large one. The public would be enabled to consume all it is capable of producing by the diversion of productive resources to public construction and services in order to prevent the saving of funds without sufficient offsetting new investment. In addition, however, Professor Hansen is a leader of a school advocating government investment for its expansionist possibilities in creating further opportunities for private investment. In this discussion, the advocates of public spending do not rely on the ancient notion that some consumption goods (like education) can best be supplied at public expense, but further on the argument that the wisdom of public investments rests on different grounds than does the wisdom of private investments. Private investments cannot be made unless they promise a profitable return in a reasonable time. Public investments may be wise even though they promise no direct return at all. This conclusion comes from the results that may develop for the economy as a whole.

For example, the Treasury might construct a highway from which it would expect no return through tolls or other charges. The project therefore would not be self-liquidating and not at all attractive to private enterprise. The highway, however, if well planned, would make possible a great increase in the national income, through a reduction in the costs of getting materials to factories, or getting manufactured or farm goods to market. It might bring about the construction of new factories or mines, or other projects, which would have become profitable for private enterprise but which would have been impossible without the highway.

Such a highway would be considered a good investment for the public even if tax revenues were raised to pay for it, but a still better one in a time of depression, when the government might finance the investment through a sale of bonds to banks. In either event, the tax revenues that would result in the future from the incomes of the various new enterprises and employment could be used to reimburse the

¹⁰ Alvin H. Hansen, "Federal Fiscal Policy Required for Full Employment," New York University (Institute on Postwar Reconstruction, now the Institute of Economic Affairs), 1946.

Treasury or to retire the bonds issued during the depression. In this sense, the project might become self-liquidating, but the wisdom of whether or not it should be made would not rest upon this calculation, but upon the possible increase in income. In other words, the increase in income would not be measured merely from the multiplier effects of the original government investment, but would include the potential increases that might follow from future private investments.

Increased Consumer Spending

We have covered in the preceding sections ways in which government might increase private investment or resort to public investment in order to increase income. Measures have also been adopted aimed to increase consumer spending.

When these problems arise as an aspect of the business cycle, attention is usually concentrated upon investment rather than consumption because the producers of investment goods usually find their businesses in a much more depressed condition than do the producers of consumption goods. Fixed capital is durable and a small decrease in the demand for consumers' goods may be reflected in a much larger decrease in the demand for investment goods. Similarly, a small increase in consumption may require a relatively large increase in investment. This is known as the "acceleration principle."¹¹ Consequently, while government spending has been devoted to the stimulation of the particularly depressed industries, such as the construction industry, in the hopes that increased consumption would follow, government has also tended to try to increase consumption directly. To some extent this attempt has resulted from social policy rather than economic; when people are unemployed and hungry a modern government cannot afford to wait for recovery. In this country, the stimulus of consumption sometimes has had the added impetus necessary to improve the prices of farm products.

The types of measures that have been adopted or advocated at one time or another include direct relief payments to unemployed work-

¹¹ To illustrate, assume that 1,000 pairs of shoes are produced each year on 100 machines, each of which lasts 10 years, and assume that 10 machines are one year old, 10 are two years old, and so on, so that 10 are needed each year for replacement. Now, if the demand for shoes declines so that 900 pairs are taken, this demand can be met by the production on 90 machines, and there will be no demand for replacement that year. Thus a 10% decline in the demand for the consumers' good results in a 100% decline in the demand for the producers' good; increases are similarly exaggerated.

ers; "work relief"; subsidies to certain groups, such as low-income groups or farmers; family allowances, as in Canada; and the like. As in the case of public investment, these measures may involve a redistribution of income through taxation of some groups in order to provide free services or payments to other groups, or they may involve the expenditure of new funds not previously subtracted from the income stream.

Consumer Credit

One of the most important factors at work, when consumption has been sufficient to provide sustained markets and continued production, has been a rising volume of consumer credit. As explained in Chapter XX, the existence of a given volume of consumer credit does not increase the ability of the public to consume, since funds borrowed by consumers reduce the purchasing power of the lenders and because repayments offset new loans. During periods of prosperity, however, the volume of purchasing power is augmented by increases in the volume of consumer credit, along with increases in the volume of commercial credit. Consequently, consumers as a group are enabled to purchase more goods although they are paying installments on existing loans. During the 1920's the volume of consumer credit rose approximately \$5,000,000,000, which represented that much more consumer goods that producers could sell. Expenditures were swelled by that much money, which either was created for the purpose or might not have been spent at all. During the war, of course, the opposite situation prevailed, partly because consumers did not want to borrow and partly because of government restrictions. At that time incomes were so inflated by government spending that demands for goods were more than adequate to sustain production without further additions to income. A rapid increase in consumer credit added to the inflated spending of 1945-1946.

Something similar to an increase in consumer credit occurs when Americans sell exports for credit. The analogy is not perfect, since the foreign borrower may be purchasing producers' goods rather than consumers' goods. The general effect is the same, however, in that goods in general are drained off the American market in the same way as if expenditures of Americans were higher. Funds are paid out as incomes, expenditures are maintained, and profitable prices per-

sist. This factor also operated during the 1920's, as American loans abroad permitted purchases of American goods. This situation presents a paradox similar to that of war: how a country may maintain or stimulate prosperity and a sufficient volume of production to have even more goods after the export of a significant part of the production than it would have had without the exports and the magnified production.

The Difficulty of Timing Government Action

One of the greatest difficulties in determining a proper course of action for government lies in the anticipation of the probable future volume of expenditures. Government is in somewhat the same position as a physician who must prescribe dosages based upon future temperature readings. The condition of the patient and the normal course of the disease help to predict temperature readings but some margin of error is unavoidable. In addition, the effects of the medicine being taken must be calculated against the anticipated temperatures that would result without medicine. Government can anticipate, sometimes with considerable accuracy, the volume of expenditures and the rate of business activity,¹² but it can also err seriously in its anticipations and miscalculate the effect of its own activities, as well.

An example of the difficulties involved may be found in the confusion which surrounded the adoption of government policy to meet the economic problems attending the end of the war. It could be shown convincingly that (1) a severe business slump would follow the cessation of huge government deficits and spending, which would be associated with millions of unemployed as men left the armed services and workers lost war jobs, and (2) that there would be a tremendous boom in production and employment as the dammed up desires of four years of wartime shortages were translated into market demands, backed by billions of saved dollars. This uncertainty was reflected in President Truman's budget estimates for fiscal 1947, prepared in January, 1946, and the revision of the estimates in August, 1946. In the original estimates, direct taxes on individuals were expected to amount to \$12,900,000,000, this estimate being based upon comparisons of tax rates with expected incomes. Eight months later the estimate was revised to \$18,400,000,000 on the basis of a

¹² For example, the often-quoted prediction by Leon Henderson of the 1937-1938 slump.

much higher national income than had been expected. The original estimate was thus only 70% of the revised estimate. At the same time, the original estimates showed a Federal deficit in 1947 of \$2,400,000,000, while the revisions showed an excess of revenues over expenditures of \$2,800,000,000.¹³

In 1929 the same uncertainties existed with respect to monetary policy. The price level in general was not rising and most of the restrictive policies of the Federal Reserve Board were aimed at speculation in securities. In 1937, again, increased government spending was advocated by some who were impressed by the large numbers of unemployed, while reduced government spending was advocated by others who were impressed by the rising price level. That the recovery had not become self-sustaining was learned—too late—when government spending was abruptly reduced and the 1937–1938 slump began shortly thereafter. The government's proportion of income-producing expenditures amounted to more than a third of such expenditures between 1930 and 1938. In 1937 the proportion dropped to approximately 5%. National income had risen from \$40,000,000,000 in 1932 to \$70,000,000,000 in 1937 but receded to \$63,600,000,000 in 1938. Public expenditures were increased and national income rose again to \$70,000,000,000 in 1939. To illustrate the difficulty of timing government action, although national income had risen to seven-eighths of its 1929 level in 1937, unemployment still exceeded 5,000,000 persons.¹⁴ The nature of the postwar budget and its contributions to and deductions from the stream of income are illustrated in Tables 82 and 83.

Control of Individual Prices

Governments have frequently exercised control over the prices of individual goods or groups of goods. The tariff in the United States is a long-standing example of government influence over certain categories of goods. Government subsidies to the merchant marine are an example of government influence on shipping rates. The purposes of such control, or influencing, of individual prices are numerous, and sometimes several purposes are involved in the

¹³ Press Release, August 3, 1946, "Statement by the President on the Review of the 1947 Budget."

¹⁴ Temporary National Economic Committee, *Hearings*, Part 9, *Savings and Investment*.

TABLE 82

FEDERAL BUDGET AND NATIONAL INCOME DATA,
FISCAL 1945 AND 1946
(billions of dollars)

Economic Group	Fiscal Year 1945	Fiscal Year 1946 ¹
Consumers		
Income after taxes	136.6	132.0
Expenditures:		
Durables	7.1	11.3
Nondurables	62.3	75.6
Services	32.6	34.3
Total expenditures	102.0	121.2
Excess of receipts (savings)	34.6	10.8
Business		
Undistributed profits and reserves	13.5	11.7
Gross capital formation:		
Domestic	5.0	19.0
Net exports	- 1.0	3.1
Total gross capital formation	4.0	22.1
Excess of receipts (+) ; capital formation (-)	+ 9.5	- 10.4
State and local government		
Receipts from public, other than borrowing	10.4	10.7
Payments to the public	8.7	9.4
Excess of receipts	1.7	1.3
Federal government		
Receipts from public, other than borrowing	50.6	50.8
Payments to the public	96.4	52.5
Excess of payments (-)	- 45.8	- 1.7
Adjustment		
Transfer payments to individuals by gov'ts	5.9	12.2
Other transfer payments	3.9	11.3
Less: gov't noncash payments for goods, etc.	1.1	1.1
Total adjustment to be deducted	8.7	22.4
Total: gross national product		
Receipts	202.4	182.8
Expenditures	202.4	182.8

¹ Estimates arrived at by taking seasonally adjusted annual rates based upon the second half of fiscal 1946.

Source: "Statement by the President on the Review of the 1947 Budget," August 3, 1946.

same action. Tariffs may be designed to raise prices in order to protect favored industries, or to attain an export balance of trade; shipping rates have been held down in order to maintain the existence of a merchant fleet in competition with other fleets; agricultural prices have been raised by government purchases and other means in order to improve the economic condition of farmers; coal prices have been controlled to prevent "destructive competition" in the coal industry; petroleum prices have been controlled in the interest of conservation; and so forth.

Many of these measures and devices do not enter into a consideration of the price level as such because they are isolated instances having little effect on the general price level. At times, however, government control of specific prices is geared to a program designed to control the whole price level. Such was the program of agricultural price supports developed during the 1930's. Since farm prices and farm incomes were depressed below the average of other prices and incomes, the government took special measures to improve the agricultural situation. At the same time, the agricultural program was part of the whole recovery program. More prosperous farmers, it was thought, would buy more farm machinery and other urban products, while more prosperous labor and industry would buy more farm products, in a widening circle of recovery.

Price Control During the War

The price control efforts of the Office of Price Administration during the war and reconversion period provide an example of the effort to control individual prices in order to stabilize the price level. Stability of the price level, of course, was not the sole end in itself, but was essential to orderly production by industry, and acquisition by government, as well as for the protection of low-income groups and for the orderly distribution of commodities.

Why Price Control Is Necessary in War

Price control is as customary a part of a government war program as are the measures to raise armies and supplies. Regulation of prices becomes a necessity because the ordinary influences that government may exert on the general price level are relatively useless or actually obstacles to the war effort. It is impossible to use restrictive measures

TABLE 83

FEDERAL GOVERNMENT
 PAYMENTS TO AND RECEIPTS FROM
 THE PUBLIC
 FISCAL YEARS 1945-1947
 (billions of dollars)

Description	1945 Actual	1946 Actual	1947	
			Estimate Jan. '46	Estimate Aug. '46
Payments to the public:				
National defense	89.9	48.2	14.8	16.4 ¹
Interest on public debt	2.8	3.7	3.8	3.8
Refunds .....	.8	2.9	1.6	1.9
Veterans' pensions, benefits .....	.9	2.9	4.3	5.8
International finance .....	..	.6	3.5	4.4
Other activities	2.5	2.3	6.7	5.0
Trust accounts	— .5	4.3	2.4	2.6
Total payments to public	96.4	64.9	37.1	39.9
Receipts from the public:				
Individual direct taxes	19.8	19.0	12.9	18.4
Corporation direct taxes	15.6	12.9	8.2	9.8
Employment taxes ² .....	.5	.5	.4	.6
Excises and customs	6.3	7.1	6.8	7.5
Miscellaneous	3.4	3.4	3.0	3.1
Trust accounts	5.0	5.2	3.4	3.3
Total revenues	50.6	48.1	34.7	42.7
Excess of revenues	— 45.8	— 16.8	— 2.4	2.8
Borrowing from public:				
Savings bonds and stamps	10.6	2.9		
Treasury bonds	26.1	12.3		
Short-term issues	14.3	— 7.9		
Gov't corp. obligations	— 1.5	— .1		
Other obligations .....	.9	— .9		
Total (net)	50.4	6.3	— 7.0	— 14.8
Total receipts from public ³	101.0	54.4	27.7	27.9

¹ Does not include \$2.1 billion terminal leave bonds.

² Net appropriation to Federal old-age and survivors' insurance trust fund is listed as trust account receipt.

³ Difference between payments and receipts is accounted for by change in Treasury cash balance and Exchange Stabilization Fund.

Source: "Statement by the President on the Review of the 1947 Budget," August 3, 1946.

to the extent necessary to prevent inflation and still obtain the expanded production that war requires. If the Federal government had raised taxes sufficiently to drain off the increasing incomes of the early war years it is most doubtful whether economic activity would have reached the heights it did in the later war years.

The first principle of war economics is to increase production. The goods needed for war can come only from increased production, diminished consumption, consumption of capital, and net imports.¹⁵ Capital cannot be used up indefinitely without replacement or production soon suffers. Net imports were not a promising field for the United States because our position in the war required net exports. The only sources of war materials and manpower left, therefore, were increased production and reduced consumption. While it is doubtless true that the American people could have reduced their consumption far below that which actually occurred at any time during the war, such reductions may tend to reduce production if carried too far.

The original wartime economic policy of the Federal government, therefore, was expansionist. While taxes were increased, they were not nearly sufficient to eliminate the rise in incomes brought about by government borrowing. For a time the production of war goods represented a net increase in total production—we had both “guns and butter.” Sooner or later, however, in a rapid expansion, production bumps into “bottlenecks,” when one industry after another reaches capacity production. The productive capacity of the country as a whole is not yet reached at this stage, but the output of various industries is being limited by the inability of contributory industries to provide essential materials or tools. Among the early bottlenecks to appear in the United States were secondhand and new machine tools, iron and steel scrap, steel mill products, and coke. The demands for these commodities started to force up their prices rapidly. This situation led to the introduction of “selective” price controls during 1941, before the United States became a belligerent. As these controls were imposed without statutory authority, they depended mainly upon patriotism for enforcement.

Eventually most of industry as a whole was operating at or near

¹⁵ Capture of booty and seizure of neutrals' property may be considered a form of imports.

capacity, and in the meantime the increased volume of expenditures that brought about this situation had greatly increased consumer incomes. By this time the problem had gotten beyond the control of fiscal policy. Sufficient taxes could not be levied to absorb the extra purchasing power in the hands of the public to the extent necessary to eliminate the inflationary pressures.

The Inflationary Gap

The difference between the amount of the national income which people might normally spend for consumption goods and the amount of such goods available came to be called the "inflationary gap." At the beginning of 1943, for example, the Office of Price Administration estimated that individual incomes that year would amount to \$125,000,000,000, and that taxes would absorb about \$15,000,000,000. That would leave \$110,000,000,000 as the disposable income that people might spend for consumption goods or save. With an estimated saving of \$25,000,000,000 the inflationary gap would amount to \$15,000,000,000 because the volume of consumers' goods available valued at ceiling prices was estimated to be \$70,000,000,000. This excess of purchasing power, largely earned in the production of war goods that were not available on the market to match the incomes, measured the extent of pressure on ceiling prices.

The inflationary gap could have been closed by additional taxes or by increased savings on the part of the public. The amount of savings during the war was, in fact, unprecedented. Funds received as incomes either were held idle much longer on the average than normally, or they were exchanged for war bonds, life insurance, savings deposits, and reductions in outstanding debts.

The Necessity for Rationing

With an inflationary gap of several billion dollars, price control would be impossible without the rationing of consumer goods and allocations and priorities for materials and producers' goods. Rationing is simply a device for removing some of the monetary incomes from the market. If those with purchasing power could buy all they wanted with their incomes, prices would be forced up until the lower-income groups were pushed out of the market. Not only would this be detrimental to the war effort directly, but it would lead

to further inflationary developments through demands for wage increases. The available supplies had to be parceled out, and the price system could not do it because aggregate demand was increasing and aggregate supplies of consumers' goods had to be restricted.

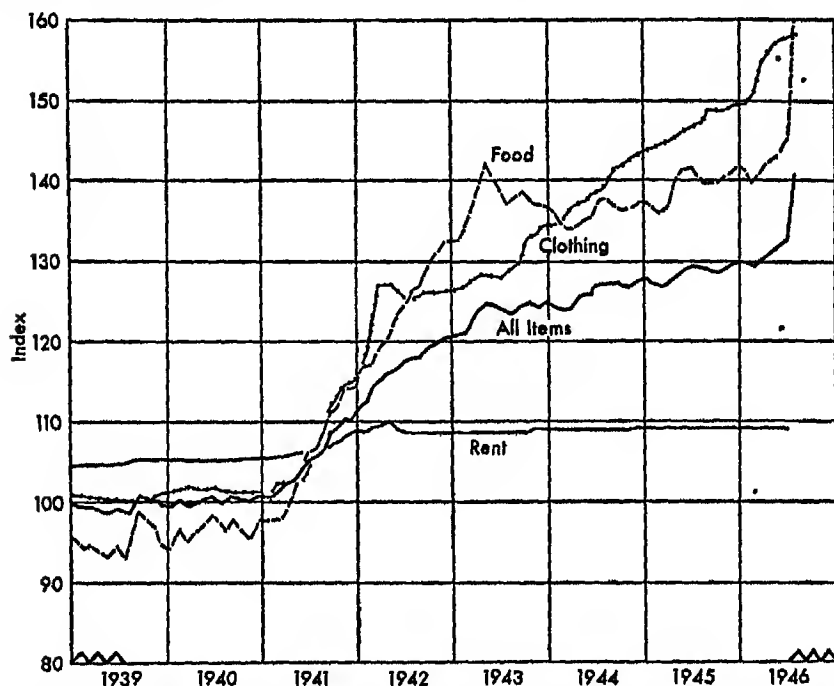


FIG. 52.—Indexes of Cost of Living, 1939–1946. (Bureau of Labor Statistics data; 1935–1939 average = 100.) See footnote, page 624.

The same sort of problem applies to producers' demands for materials, machines, and labor. With an assured market for all that can be produced, and with an increase of profits in many cases through the reduction of overhead costs per unit of output, producers are anxious to operate at capacity. They exert more and more buying pressure on the bottlenecks, attempting to buy whatever they need to maintain their production. One small example that illustrates the nature of the problem very well was the efforts of beer and soft-drink manufacturers to obtain crowns, or "caps," for their bottles, after the steel normally used was diverted to more urgent uses. Their whole business was threatened by the lack of crowns, and conse-

quently they were willing to pay much higher than normal prices to get them. Crowns were made from used tin cans and used crowns were re-formed, at considerably higher cost. The multiplication of this minor example by the thousands of times that more significant cost increases took place illustrates the pressure that increased buying of everything eventually places on the cost of everything. The only preventive is to reduce the buying all round by a limitation on what various buyers can have, regardless of their purchasing power.

Such limitations lead to two possibilities—increased savings and black markets. If the excess incomes cannot legally be spent, in observance of price control and rationing, they must be held or exchanged for debts, or else they can be spent illegally for contraband articles at over-ceiling prices.

There are several reasons why price control and rationing become necessary as buttresses for fiscal policy. One reason why taxation is necessarily inadequate is the desirability that people have sufficient incentive to do the jobs that the government wants them to do. If government offers high wages to attract workers from far and wide to government shipyards and airplane plants, there is no point in nullifying the incentive through increased taxes. Similarly, if a business firm is requested to produce bullet clips instead of belt buckles, there is no point in reducing its net earnings by taxation. Other measures may be virtually essential; the government officials may say: "There is no more steel and brass for belt buckles, but you can stay in business by producing bullet clips." Even so, some additional profit serves to clear the path to war production.

Some Principles of Price Control

The Office of Price Administration was a revolutionary development in the United States. In World War I price control came about late in the war, was never very effective, and was dropped at the end of hostilities. Although price control was widely recognized as a necessity in World War II, it was accepted only as a necessary evil by most sellers. Congress was slow to give statutory authority to the agency which it continually hedged about with restrictions for favored segments of the economy. Even so, the efforts of the agency were marked with conspicuous success in the accomplishment of its objectives, at least through the period of hostilities. General reac-

tion against "regimentation" and the multiplied efforts of pressure groups succeeded in greatly reducing the ability of the agency to control individual prices when the price control law was renewed in the summer of 1946.

The vastly greater inflationary pressures of World War II in comparison to those of World War I brought about new principles of price control, on which the new regulations were based. In World War I, the general principle of the price-controllers was the "bulk-line principle." By this was meant that the costs of production of the various producers in an industry were ascertained, and a maximum price set which would cover the costs of the bulk of the production. This principle was adopted because it coincided with the normal relation of price to costs in a competitive market. Price normally covers the costs of most of the output, and at that price the "sub-marginal" firms take losses, the "marginal" firms break even, and the firms with lower costs make profits.

As mentioned above, the first regulations in World War II were drawn up to cover bottleneck situations that occurred even before this country entered the war. The usual method was simply to "freeze" existing prices either at their then-existing level or at some previous level. When it became apparent early in 1942 that the government's tax policy was going to be far less severe than it might well have been, specific controls were followed by an over-all freeze of prices. The price level had begun to rise at an alarming rate and it was impossible to cover the field by one regulation after another. The General Maximum Price Regulation was issued to freeze all prices at those in effect in March, 1942.

In the meantime Congress had passed the Emergency Price Control Act, which required that maximum prices be "generally fair and equitable" and provided that prices prevailing in October 1-15, 1941, were *prima facie* proper in the absence of unusual seasonal variations or cost or profit changes. The General Maximum Price Regulation was followed by numerous specific regulations designed to recognize trade practices and other peculiarities pertinent in each instance, and to roll back prices to the October level so far as possible.

The principle adopted by the OPA to determine whether prices were generally "fair and equitable" was to compare the earnings of an industry with its average earnings during the base period 1936-

1939. In virtually every instance, industry earned a larger volume of profits during each war year than it averaged during this prewar period.

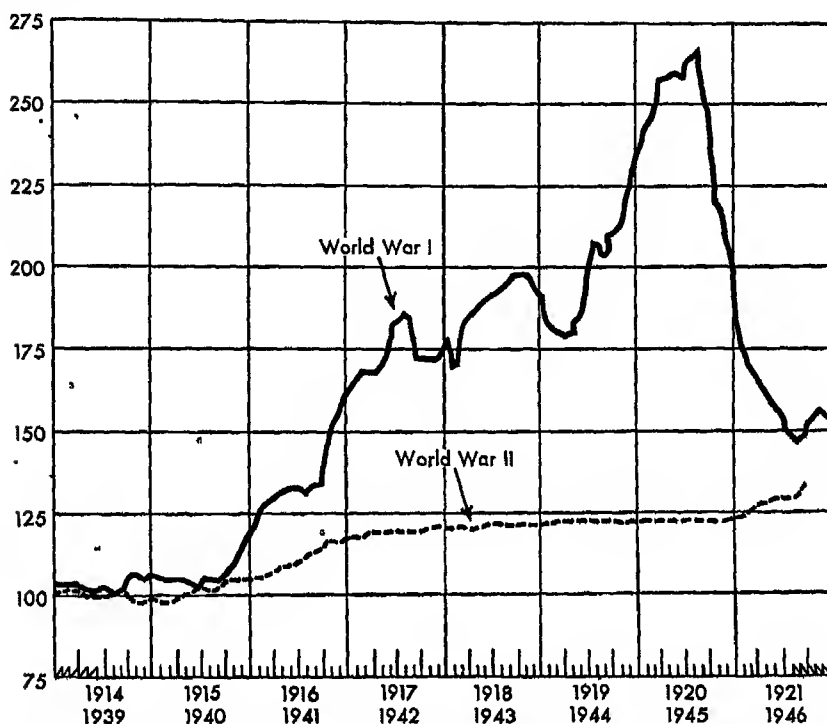


FIG. 53.—Indexes of Industrial Wholesale Prices in the Two World Wars. (Bureau of Labor Statistics data; July, 1914 = 100; August, 1939 = 100.)

The creation of maximum prices for newly designed goods was particularly difficult. In order to freeze a price, there must be a commodity to which it can be frozen. It was relatively easy, for example, to provide maximum prices for certain sizes of packers' tin cans, because they are all alike. But some provision had to be made for articles that deviated from standard because they were newly designed or made from substitute materials. In some instances a standard formula would suffice. The packers' tin can regulation, for example, provided specific charges that could be added for cans of new sizes and later amendments provided for the use of blackplate instead of tinplate, with differentials for certain coatings and enamels.

The newly designed article, however, presented a much more diffi-

cult problem. Many industrial items are produced to the design of the purchaser; examples are castings, forgings, and screw machine products. Castings vary greatly in intricacy, a fact which greatly influences their cost; besides differences in labor costs there is a great variation in the percentage of rejections. It is impossible to forecast these costs when the price-control agency does not even know what new castings will be designed. Consequently, it became necessary that sellers impose upon themselves their own price controls, and needless to say, they did so with much more elastic results than were obtained with other prices.

Changes in Ceilings

Maximum prices might be raised on an industry-wide basis or for individual sellers. They might be raised for "statutory" reasons (i.e., because they were no longer generally fair and equitable) or for "supply" reasons, that is, to stimulate output of particularly needed items.

The question of raising ceilings brought about the principle of cost absorption. Under this principle, the OPA refused to raise ceilings for industries whose costs had risen since their maximum prices had been established, unless the increased costs squeezed earnings below the 1936-1939 average. Most industries were able to absorb considerable cost increases because of their high rate of output or because of conversion to more profitable war items. A concomitant principle was that, when ceiling prices were raised for one industry, or for one product which was a cost item for other industries, the ceilings in the other industries were not automatically raised. They, too, were required to absorb the increased costs if the increase would not reduce their earnings below the 1936-1939 volume. Thus, when increased wages for miners forced increased maximum prices for coal and then for coke made from the coal, prices of steel mill products and foundry products were not raised as long as those respective industries were earning more than their base-period profits.

A maximum price could be "generally" fair and equitable, on the industry-earnings basis, and still not provide profits for each individual seller. Whether a seller who was unable to make a profit could obtain price relief or not then depended upon the necessity of the

article to the war effort, and the degree of relief depended upon the seller's over-all earnings. Price relief, as a general rule, would not be granted to the producer of a nonessential commodity if he could not make a profit under a ceiling that was generally fair and equitable. On the other hand, the OPA would not prevent the production of necessary items by a refusal to grant higher ceilings. The amount of

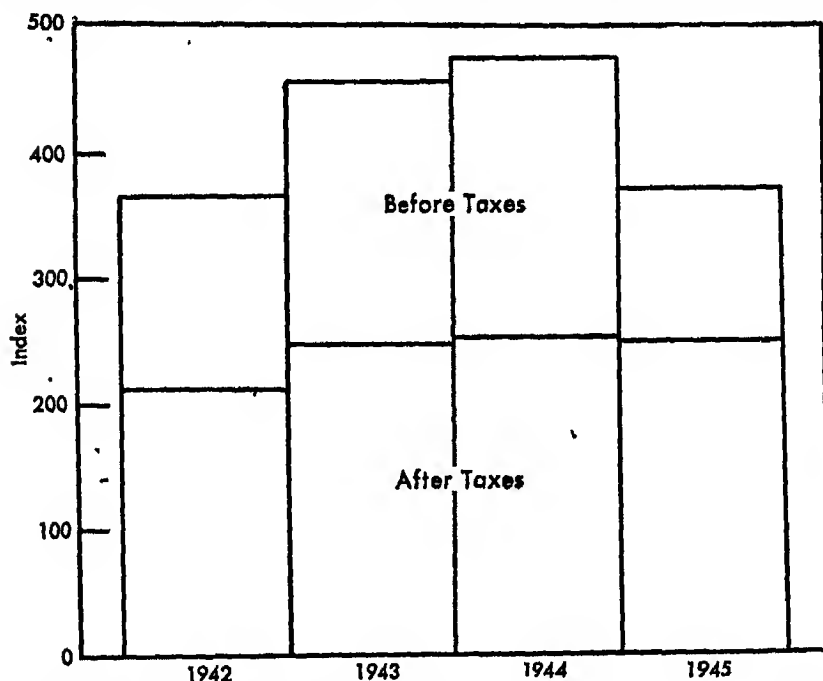


FIG. 54.—Corporate Profits, 1942-1945. (Index numbers: 1939 = 100.) Source: Office of Price Administration.

price relief required would be calculated according to the "need" of the producer. The standards varied somewhat from branch to branch within the office, but in general they provided some such formula as this: if the producer's over-all earnings were in excess of his 1936-1939 earnings by some stated amount (like 50% or 100%), the ceiling on the particular item would be raised for that seller, if necessary to cover his direct costs of producing it; if his earnings approximated his base-period earnings, the ceiling would be raised, if necessary to cover his total costs of producing the item; and if his over-all earnings were less than his base-period earnings, the new

ceiling would cover total costs plus some margin, usually the base-period average margin in the industry.

These principles were often considered too restrictive by industry representatives. It became necessary, in some instances, that the War Production Board use its priority powers to get the desired production. In general, however, the index of industrial production was clear proof that production was not held back by price control.

Through the rigid application of these principles of price control the Office of Price Administration was successful to a surprising degree in holding back the inflationary forces brought about by war finance. By the end of the war the problem, in some ways, had merely been postponed. Cash balances were at a much higher level than consumers wanted to hold, in view of the existing price level. At the same time, many goods in short supply remained so for many months. Many circumstances that had permitted cost absorption disappeared with the end of the war, such as the production of relatively high-priced war items. At the same time, wage increases were permitted under the stabilization program that, from the point of view of price control, added to costs at just the wrong moment. The result was a considerable relaxation of maximum prices shortly after the end of hostilities. This relaxation was followed by the greatly weakened Price Control Act of 1946, which imposed several new legislative standards upon the office. For example, cost absorption could not be applied if it reduced the margins of distributors of certain products, and ceilings could not be imposed at all on other goods. As a result, many prices went up sharply during the summer of 1946.¹⁶ Even so, however, the price level was much more stable throughout the period of hostilities and for some time after than had been the case in World War I, or than had been predicted by many during the early years of the war.

¹⁶ When price control was temporarily abandoned in July the BLS index of 28 sensitive commodity prices rose from 200 to 250 (August 1939 = 100), or 25%. The wholesale price level rose more slowly but continued to rise longer. It had reached 127 on August 10, compared to 112 on June 29. The cost of living index, which rose only seven points between May, 1943, and May, 1946, rose eight points in the two months May 15-July 15. Carrying the comparison back to 1926, farm prices were 62% higher; food prices, 44% higher; and other prices only 11% higher. Price increases did not stop at this point. By the end of 1947 the cost-of-living index was at 168, 1935-1939 being 100. The food component of the index was slightly more than double the 1935-1939 average.

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